



REPORT
OF
METROPOLITAN PARK COMMISSION

1897

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REPORT

OF THE

Board of Metropolitan Park Commissioners.

JANUARY, 1897.

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Commonwealth of Massachusetts.

REPORT.

The Metropolitan Park Commission presents herewith its fourth annual report.

The work of this Commission, and especially the matters to be presented in this report, cannot be fully understood without some knowledge of its previous reports and of the legislation under which it has acted. It will be a manifest convenience, therefore, to briefly review both at the outset of this report.

The subject of a Metropolitan Park System was discussed and the general plan outlined in a report made Jan. 1, 1893, by a preliminary commission, appointed to consider the advisability of laying out ample open spaces in the vicinity of Boston. That report pointed out the Metropolitan community of life and interests in the cities and towns for twelve miles about Boston, enumerated the dominant features of this Metropolitan area in the order of their importance, and suggested a method of securing and holding them as open spaces for exercise and recreation. As a result, the Metropolitan Park Act, chapter 407, Acts of 1893, was passed, and this Board appointed, with adequate powers to carry out its provisions in a Metropolitan District of thirty-seven cities and towns. An appropriation of \$1,000,000 was at the same time provided by a loan from the Commonwealth on its forty-year bonds, to be repaid by yearly assessments upon the district, according to a rate to be determined each five years by a separate commission to be appointed by the supreme court. The yearly expense

of care and maintenance was to be assessed at the same rate. Various minor acts have since been passed, to enable the Board to carry out to its full intention the trust thus created. The confidence thus reposed in this Board as well as its labors were materially increased by chapter 288 of the Acts of 1894, usually called the Boulevard Act, which empowered it to connect any public open space with any part of the district. An appropriation of \$500,000 under this act was intended to provide for a suitable approach to the Blue Hills and to the Middlesex Fells. The loan for this last appropriation is known as Metropolitan Parks Loan, Series Two, and the others have been grouped as Metropolitan Parks Loan, Series One, and Charles River Loan.

In its last report the Board described the reservations which had been acquired under the Park Acts. Blue Hills, twelve miles to the south of the State House, and Middlesex Fells, five miles to the north, were reported to have been taken as great reservations of wooded wild lands; Stony Brook, a smaller reservation, five miles to the south, had been taken to frame the picture of the Great Blue in a future parkway from Bussey Woods of the Boston Park System to the Blue Hills; Hemlock Gorge, on the upper Charles, and Beaver Brook, to the north-west, — the latter celebrated for its great oaks and its brook famous in Lowell's poem, — had been taken as spots of rarest beauty and interest. About all the banks of Charles River to Watertown not already in other public ownership, and three miles of Revere Beach to the north-east, had also been acquired as the best selections of river-bank and sea-shore within the Metropolitan District. Land to form part of the West Roxbury Parkway from Bussey Woods to Stony Brook Woods had also been taken, and transferred to the city of Boston for care and development; while the tiny quarter mile of King's Beach, at the extreme north-east corner of the district, which had been taken to encourage Swampscott to acquire its neighboring Blaney Beach, was soon to be transferred to that town to care for at its own expense. Within the larger woods reservations, it was also reported, the dead trees and underbrush had been largely cleared away, and a considerable number of preliminary roads and paths built on the

line of former cart paths, and opened at once to the public. Even this development was more than had been at first contemplated, but had been found necessary to prevent fires, and to satisfy the plainly manifested desire of the public to make immediate use of the reservations. The smaller woods reservations had been merely cleared of rubbish and the more important trees cared for. On Charles River no development had been provided for or undertaken. At Revere Beach no development had been possible, because of the magnitude of the preliminary problems to be solved, but progress in the solution of these problems was reported.

Under the Boulevard Act the Board at the same time reported that a plan had been adopted to provide on the south a broad and easy road or parkway between the Blue Hills and Mattapan Square, where connection would be made with the Boston Park System through Blue Hill Avenue to Franklin Park, and on the north a similar parkway between Bears' Den and Pine Hill, the two southernmost points of the Middlesex Fells, and Broadway Park, Somerville, which lies on the outer edge of the dense population, two and one-half miles from the State House. Land had been acquired for portions of the latter in Malden and Medford, and construction begun. Land had also been acquired, mostly by gift, for an additional parkway along Mystic Lakes and Abbajona River from West Medford to Winchester close by the Fells, and construction of a driveway begun.

These latter takings and construction and the lands to be taken for Blue Hills Parkway were then estimated to require the entire appropriation under the Boulevard Act. Detailed reasons were given to explain the necessity for an additional appropriation of \$500,000 to complete the work already undertaken under the Park Acts. No appropriations for new work were asked for under either act, because it was felt that, although a larger part of the entire plan outlined in the report of the preliminary commission had been carried out than was supposed possible under the appropriations first made, none the less a fuller understanding of the whole matter made it seem right to pause and ask the Legislature to determine the course to be thereafter pursued. The

Board therefore contented itself with mere suggestions as to the possibility and proper scope of future work.

During the winter of 1896 petitions and bills were presented to the Legislature from various parts of the district, asking that this Board be authorized and even commanded to continue its work, and that adequate appropriations be made for such purpose. Some of these petitions asked that the appropriations be limited to specific reservations or pieces of work. The Board attended more than a dozen hearings, but was unwilling to express any opinions as to their merits not already expressed in its reports, unless further opportunity was afforded for detailed study. Finally, however, at the request of the committee having these matters in hand, the Commission with its landscape advisers reviewed the plan outlined by the preliminary commission, and indicated the portions which had been carried out and the additional reservations which it would be advisable to secure at once, if an appropriation of \$500,000 should be made under the Park Acts in addition to that required for work in hand. As most of the petitions had been presented under the Boulevard Act, the Board stated in regard to them that the only work under that act which it could wisely undertake would be such as was designed to make the reservations acquired under the Park Acts more available, and as part of a complete plan to unite these reservations into a Metropolitan System. Such a general plan, providing for present acquirement of lands and limited construction to cost \$1,000,000, was outlined. As a result of these hearings and of the report made by the committee, a general appropriation of \$1,000,000 was made by the Legislature under the Park Acts by chapter 466 of the Acts of 1896; and an appropriation, reduced from the estimate of the Commission to \$500,000, was made under the Boulevard Act, by chapter 472 of the Acts of 1896.

The total appropriations thus far made to the use of this Board are, therefore, under the Park Acts \$3,000,000, under Charles River Act \$300,000, and under the Boulevard Acts \$1,000,000.

The conditions of these appropriations Dec. 1, 1896, is shown by the following statement:—

Metropolitan Parks Loan, Series I.

Total of loans,		\$3,000,000 00
Expended to Dec. 1, 1896,	\$1,963,225 02	
Sinking fund requirements to 1896,	18,980 18	
Care and maintenance to July 1, 1896,	85,813 46	
	<u>\$2,068,018 66</u>	
Amount retained by treasurer to cover further charges:—		
Sinking fund, 1897, 1898 and 1899,	151,184 16	
Interest,	375,551 88	
Balance of \$40,000 appropriation for expenses of 1896,	<u>22,337 26</u>	
		<u>2,617,091 96</u>
Amount available on Parks Loan,		\$382,908 04

Metropolitan Parks Loan, Series II.

Total of loans,		\$1,000,000 00
Expended to Dec. 1, 1896,	\$307,769 94	
Sinking fund requirements to 1896,	3,650 03	
	<u>\$311,419 97</u>	
Amount retained by treasurer to cover further charges:—		
Sinking fund, 1897, 1898 and 1899,	22,906 68	
Interest,	<u>61,250 00</u>	
		<u>395,576 65</u>
Amount available on Parks Loan, Series Two,		\$604,423 35
Charles River Loan,		\$300,000 00
Expended to Dec. 1, 1896,		<u>150,508 76</u>
Amount available on Charles River Loan,		\$149,491 24

In this statement certain charges for sinking fund, interest and maintenance, amounting to \$741,673.65, will be noted. These require explanation. Subsequent to the appropriation made in 1896, an act (chapter 550 of the Acts of 1896) was passed which set aside the apportionment already made as a basis for repayment of these appropriations by the District to the Commonwealth, provided for a new apportionment in 1900, and directed that the interest and sinking fund requirements and all expenses for care and maintenance should be paid out of the principal of the loans already made. The same act also directed this Commission to complete all its work of construction and acquirement before that date.

The situation created by this act was embarrassing. On

the one hand, the Board was authorized to make new takings to the extent of considerable appropriations; and, on the other, these appropriations were withdrawn to other uses. Its actual financial ability was less than if the Legislature had been content to make appropriations only to the amount necessary to complete the work actually in hand. The Board certainly had no reason to feel that this act meant a disapproval of its work and plans, and yet the completion of the work already undertaken was threatened. Under these circumstances it was decided to curtail expenses; to make no new takings except such as could certainly be paid for by the appropriations, after allowing for the requirements of the new act of apportionment; to confine the work of the remainder of the year to work already in hand and minor details of management and development, to settlement for lands taken and to investigation and accumulation of data for possible new work.

The reservations acquired under the Park Acts remain, therefore, practically the same as last year. In the Middlesex Fells 166 acres have been taken which had been previously omitted, at the request of the city of Medford, in the idea, formed before the Metropolitan Water System was provided for, that they would be needed as a part of the water system of that city. An entrance has been taken to the Stony Brook Reservation from Gordon Avenue, Hyde Park, and other slight takings and abandonments have been made, either for scenery or the improvement of boundaries, or to facilitate settlements with adjoining owners. The area of the reservations now in the care of the Commission are as follows:—

	Acres.
Blue Hills,	4,189.69
Middlesex Fells,	1,799.60
Stony Brook,	460.64
Charles River,	188.88
Beaver Brook,	58.08
Hemlock Gorge,	24.68
Revere Beach,	63.29
Total,	<hr/> 6,784.86

In this list West Roxbury Parkway, previously transferred to the city of Boston, and King's Beach, to be transferred to



BLUE HILLS PARKWAY.

the town of Swampscott, are not included. In the Middlesex Fells the holdings of the water boards, amounting to about 1,200 acres, are in the care of the Commission, although not formally transferred.

Two important takings, however, have been made this year under the Boulevard Acts, which have showed a safe balance of appropriations. The first, in April last, was of lands and existing streets for the Blue Hills Parkway from Mattapan Square to the Harland Street entrance to the Blue Hills; the second, in November, was of lands from Broadway Park, Somerville, to Pleasant Street, Malden, and Salem Street, Medford, for the completion of the parkway to Middlesex Fells. These, with the Mystic Valley Parkway, make a total length of 8.97 miles.

Two important gifts of land have been received the past year. The first was of land in connection with the Mystic Valley Parkway, from the Francis Brooks real estate trust and Mr. Peter C. Brooks; the second was of land for about one-half of a mile along the northerly side of the Neponset River from Mattapan Square towards Hyde Park. The shore opposite has also been given to the town of Milton.

In addition, a sum of about \$1,000 has been given by Miss Ellen Wright and others, to be used in the discretion of the Commission either in tree planting or to erect an outlook on Pine Hill, Medford. It is probable that the Board will prefer the outlook, and will make it in some degree a memorial to Elizur Wright, whose life was so largely devoted to initiating the movement to secure these reservations.

The management of the reservations has been revised and improved. In the woods reservations the preliminary development of clearing and road building is practically done. The office of general superintendent is now unnecessary, and each reservation in which work is being done is in charge of a resident superintendent, who is responsible directly to the Commission through its executive officer, the secretary. The police have been uniformed, and so far as possible required to live upon the reservations in houses belonging to the Commonwealth. The other em-

ployees have been reduced to the basis of a permanent force required for care in the present stage of development. In the Blue Hills only bridle paths have been built, chiefly as fireguards. In the Fells one short connecting road has been built, and about a mile of boundary road; and some of the roads widened to meet the needs of the constantly increasing use of the reservation. Revere Beach has received the most attention. An efficient police force was organized early in the season, and has been very successful in aiding and controlling the crowds, sometimes of 40,000 in a single day. The buildings between the railroad and water which were leased during the summer have since been removed, with the exception of the few required for administration purposes. Satisfactory contracts have been made with the railroads to move to new locations and abolish grade crossings before May, 1897, and construction is well under way. Under the Boulevard Act construction of the easterly branch of Fellsway has been completed from Pleasant Street, Malden, to Bears' Den, and has become the principal entrance to the easterly side of the Fells. The Mystic Valley Driveway has been completed to sub-grade, and will probably be finished before next summer. In the Blue Hills Parkway the existing roads have been repaired, and now furnish ample accommodation, except between Mattapan Square and Brook Road. It is hoped to construct this portion to its full width with double roadway next year.

Looking to the future, the line of duty seems very plain. The work in which this Commission is engaged is that of the Commonwealth and the District, not its own. It is three-fold, including, first, the care of the reservations and parkways already acquired; next, the new work of development and acquirement; and lastly, investigation and study of those portions of the plan outlined by the preliminary commission not yet reported on in detail, and of other problems especially assigned to it. Every effort is made to conduct this work in all its branches discreetly, economically and rapidly. The service of the Commission is rendered freely, but none the less with devotion to the work, and is a considerable draft upon the time and strength of

its members. The reservations already acquired and work already done represent a distinct addition to the material resources of the Commonwealth. Considered merely as salable assets, they are worth more than they have cost, and in addition they have a present material value, in that they make every bond of the Commonwealth bear a lower rate of interest. The value of such an investment ought to be preserved and increased and handed on at its best. But they have a higher value in the renown they bring to the Commonwealth and in the health and pleasure they give to the public. It is apparent that there is a constantly increasing use of the reservations and a demand for new development and additional acquirements.

In the face of these facts, the Board is a conservative factor in asking that appropriations be made in general form and with continuing certainty, yet not so rapidly nor so great in amount as to preclude deliberate action and necessary study of details. For the coming year it is of the first importance that the large withdrawal of available funds made during the past year be provided for either by some new appropriation for the requirements of the sinking fund and for care and maintenance until 1900, or by an additional appropriation made directly to the use of the Commission. In this way only can the Commonwealth meet the obligations which it has authorized, and properly preserve and make use of the property which it has intrusted to the care of this Commission.

So much, then, for the work that must be done. In addition, there remain opportunities and duties which impress themselves most strongly on any one who studies the Metropolitan District as this Board has done for several years. The dominant physical features of the district are its wild lands, rivers and sea-shore. When the Board began its work, the most interesting large areas of wild lands not already preserved were the Blue Hills and Middlesex Fells. They were in immediate danger of destruction, and were therefore the first care of the Board. It does not seem wise to acquire any other large reservations of this class, although the care of the Lynn Woods (2,000 acres), which was acquired by the city of Lynn in advance of the work of this Board, might properly be undertaken, and small takings

made to round out its boundaries and provide convenient approaches.

Of the sea-shore of the district the best "open space for exercise and recreation" has been secured in Revere Beach. Unsurpassed in beauty, it is only five miles from the State House and one mile from Lynn, and is accessible to all populous parts of the district by steam or electric cars, and low fares. The argument for additional acquirements is very strong, however. The sea-shore always has a charm and refreshment, and at certain seasons of the year becomes the great breathing space to which the fevered community rushes. Then countless lives may be saved by its mere accessibility. The available sea-shore of the district is limited, and is being shut out from the public for private pleasure and profit more and more each year. There remain, however, three miles at Winthrop and six miles on Quincy Bay, which may now be secured at little more than the nominal cost of building a road between the ocean and the private land beyond. This opportunity ought at once to be embraced, or it will soon be lost.

The rivers of the district are three, — the Charles, the Mystic and the Neponset. They are at once the air-ducts and unfortunately the drainage canals of the district. Within a lifetime their waters were clear as crystal and their shores almost unscarred. To-day they are muddy, and their beauty obscured by miserable buildings drawn to their shores by the cheapness of the land. It has already cost large sums to prevent their pollution by sewerage, and yet each inflowing tide brings filth from the harbor. Of these rivers, the Charles is most important and beautiful. It flows between Boston and Cambridge, and cuts the entire district in two. In many ways it has become the greatest pleasure resort of the district, although its resources are so little available. At Riverside, ten miles out, where the river is most beautiful, thousands of canoes and boats make on a pleasant summer holiday a scene that rivals the world-known one of the English Thames. Once Charles River was just as beautiful down to the heart of the city, and it may again become equally beautiful and far more useful to the ever-increasing population. Within the cities of Cam-

bridge and Boston the shores belong to the municipalities, and the time and plan of development is to be determined in large measure by them. Most of the remaining shores to Watertown public landing have been acquired, however, by this Board, and the District and the Commonwealth have an interest in them. With such different ownerships and varying interests, either the entire shores already acquired ought to be placed in charge of a single Board, or, what is more practicable, a general plan ought to be adopted, according to which development may proceed harmoniously but at the convenience of the various controlling Boards. Such a plan was recommended in 1894 by a Joint Board of the State Board of Health and this Commission, of which the essential features were the location of future bridges and of a dam and lock for economy in development, and to make the river always navigable by keeping its level at grade 8, just below the level of the marshes. Practical problems of bridges, embankments and boundary streets must be decided in the immediate future, and the adoption of this plan and the location of a dam either near Craigie Bridge or Cottage Farm may save mistaken expenditure, to correct which in the future will cost vast sums. The same Joint Board also reported last year a plan for protecting the Upper Charles from Watertown to Dedham by acquiring occasional public landings, and upon the remaining shores an easement against nuisances and destruction of trees; by restricting the withdrawal of water below a fixed level; and by establishing a river police.

There are many other possible acquirements which would preserve the dignity and beauty of the district, and serve more or less the general needs; but the one problem of surpassing importance to the Metropolitan District is that of Charles River, and the Board therefore recommends that the locations for a dam at either Craigie Bridge or Cottage Farm and of future bridges as far as Brighton be now determined upon, and that appropriations be made to warrant the carrying out of the plan suggested by the Joint Board for the protection of the river from Watertown to Dedham.

Under the Boulevard Act, practical approaches for all classes of travel have been provided to the great woods

reservations on the north and on the south. Along Mystic Lakes a reservation has been acquired and a drive constructed which may be extended to Fresh Pond and Charles River. These are examples of what may be done to construct safe approaches to all the reservations, and to unite them into a Metropolitan System. The directions which such parkways should take will never be clearer, and land and materials can now be had at prices which in a few years will seem incredible. The entire system can be completed rapidly, and at a cost lower than ever again. It must, however, be always remembered that this Commission was appointed to secure open spaces for exercise and recreation, and that it is primarily a Park Commission. It may therefore enter upon this line of work only so far as it is in subordination to the former idea of a park system made up of reservations and parkways of distinctly Metropolitan importance. Even then the added labor and responsibility to this Commission will be very great, and important changes in method and administration may become necessary. But, on the whole, the important question to be settled is whether the district is willing to enter into the necessary expense. That question can be decided only by hearings before the Legislature; and therefore this Board, having stated the case, and through the report of its Landscape Architects and Engineer indicated the plan to be pursued and the probable rate of expense, can make no further recommendation than that the matter be so considered and decided.

The usual accompanying reports of the Secretary and Landscape Architect, and, for the first time, the report of the Engineer, are transmitted herewith.

Respectfully submitted,

WILLIAM B. DE LAS CASAS.
ABRAHAM L. RICHARDS.
AUGUSTUS HEMENWAY.
EDWIN B. HASKELL.
EDWIN U. CURTIS.

DEC. 15, 1896.

REPORT OF THE SECRETARY.

Mr. WILLIAM B. DE LAS CASAS,

Chairman Metropolitan Park Commission.

SIR:—I herewith present my report for the year ending Dec. 1, 1896.

Under the Boulevard Act, so called (chapter 288 of the Acts of 1894), two important takings of lands have been made this year by the Commission. In April last lands were taken in Milton from the Neponset River at Mattapan Square to the Harland Street entrance to the Blue Hills Reservation for the proposed Blue Hills Parkway. In November lands were taken from Broadway Park in Somerville to Pleasant Street in Malden and Salem Street in Medford for the completion of the Middlesex Fells Parkway. The earlier taking, by its connection with Blue Hill Avenue at Mattapan Square, provides for a broad avenue from Franklin Park of the Boston Park System to the Blue Hills Reservation, the southernmost reservation of the Metropolitan Park System. The later taking, which will be known as Fellsway, connects at Pleasant Street with Fellsway East, and at Salem Street with Fellsway West, thus providing an approach from a park two and a half miles north of the State House to the eastern and western sections of the Middlesex Fells, the most northerly of the reservations of the Metropolitan System.

At the date of the last report lands had already been taken from Weir Bridge in West Medford along the banks of the Mystic Lakes and the Abbajona River to Winchester for the Mystic Valley Parkway. These lands have been added to by two gifts, one from the Francis Brooks real estate trust of lands in Medford, another from Mr. Peter C. Brooks of a parcel of land in Winchester on the western shore of the Upper Mystic Lake, through which once passed the line of the Middlesex Canal. The latter parcel offers an oppor-

tunity to connect the Parkway, if it is desired, with the highways on the westerly side of these lakes. One small abandonment has been made by a change in the alignment of the driveway at its junction with the northerly line of Bacon Street in Winchester.

Two slight changes have been made in the boundaries of Fellsway East, one by a taking at the junction of Sawyer Street and Highland Avenue, the other by a small abandonment at the entrance of Maple Street into the Parkway, both of which simplified problems of construction.

The lengths of these parkways are as follows:—

Blue Hills Parkway,	Miles. 2.25
Middlesex Fells Parkway:—	
Fellsway,	Miles. 2.18
Fellsway East,	1.10
Fellsway West,	1.04
	— 4.32
Mystic Valley Parkway,	2.40
	—
Total,	8.97

Under the Park Act (chapter 407 of the Acts of 1893) no lands have been taken this year by the Commission for the creation of a new reservation. The Metropolitan Park Reservations remain, therefore, seven in number; namely, the Blue Hills, Middlesex Fells, Stony Brook, Charles River, Beaver Brook, Hemlock Gorge and Revere Beach. This does not include the West Roxbury Parkway, which has been transferred to the city of Boston, nor King's Beach, which is to be transferred to the town of Swampscott. A number of takings and abandonments, however, have been made which have changed the boundaries of the several reservations affected. In the Middlesex Fells Reservation, west of Forest Street in Medford, there existed in private ownership a tract of woodland of about one hundred and sixty-six acres, bounded on three sides by the Middlesex Fells Reservation and on the remaining side by the water works reservation of the city of Medford. This island of private ownership was not included in the original takings of this Commission, on account of the expressed intention of the city of Medford to acquire these lands as an addition

to its other water-supply holdings. Subsequent events, however, having led that city to abandon its original plan, it became necessary for this Commission to take these lands to preserve the integrity of the Middlesex Fells as a public reservation, and this was done in April of this year. Other changes have been made in the boundaries of the Fells Reservation by six deeds of abandonment to the owners of abutting properties, the intention being in each case to substantially lessen existing claims against the Commonwealth so far as it could be done without material damage to the beauty or usefulness of the reservation.

The completion of the topographical survey of the Stony Brook Reservation has enabled the Landscape Architects to suggest improvements in the eastern and western boundary lines of this reservation throughout their entire lengths, from Washington Street in Boston to the town of Hyde Park. By a series of takings and abandonments of small strips of land new boundary lines have been established, along which ultimately boundary roads can be built. As a part of the same scheme, additional land has been taken to provide for a convenient entrance to the reservation from Gordon Avenue in the town of Hyde Park.

On the Charles River one taking and one abandonment have been made. About an acre of land has been acquired near the public landing in Watertown, which will make possible a better development of the reservation than the somewhat restricted taking at this point permitted. The abandonment was of less than an acre of land adjoining the Abbatoir property in Brighton, and was made for the purpose of settling a disputed boundary.

In the Beaver Brook Reservation the northern boundary has been amended, in accordance with an agreement made with the abutting owner at the time of settlement. Slight changes have been made in the boundary line along Mill Street in Belmont to make it conform to the laying out of this street on lines established by the Middlesex county commissioners.

There has been added to the Hemlock Gorge Reservation a small tract of unoccupied land on the Newton side of the Charles River, which seemed a desirable accession to the

reservation, as ensuring the preservation of the river banks at this point from any offensive use, and as also providing another convenient mode of approach to the reservation. For similar reasons it was deemed desirable to add to the King's Beach Reservation a small piece of adjoining unoccupied land.

In the Revere Beach Reservation the original intention of taking the beach in front of the Point of Pines Hotel has been abandoned. It would seem that this portion of the beach is not essential to the plan for this reservation, and that its abandonment will not only lessen the cost of the scheme, but will also leave the remaining property in better condition for development.

The area of these various reservations now stands as follows :—

	Acres.
Blue Hills,	4,189.69
Middlesex Fells,*	1,799.60
Stony Brook, '	460.64
Charles River,	188.88
Beaver Brook,	58.08
Hemlock Gorge,	24.68
Revere Beach,	63.29
Total,	<u>6,784.86</u>

A gift has been accepted by the Commission of a portion of the west bank of the Neponset River, lying partly in Hyde Park and partly in Mattapan, just south of the point of beginning of the Blue Hills Parkway. This strip of land is about fifty feet in width and half a mile in length, and is transferred to the Commonwealth by the owners in the belief that the placing of the river bank in public hands, and the development of their adjoining lands with relation thereto, will be an advantage both to them and to the public. A portion of the east bank of the river directly opposite this land has already been given to the town of Milton for park purposes.

A gift of about one thousand dollars has also been accepted by the Commission from Miss Ellen M. Wright and

* This is exclusive of the holdings of the local water boards, which amount to about 1,200 acres, and are at present under the care and control of the Metropolitan Park Commission under agreements with these boards.



BEAVER BROOK RESERVATION.

others, to be used in the erection of some suitable place of observation on the summit of Pine Hill, Medford, in the Middlesex Fells Reservation. It is the intention of the Commission that the result shall in some suitable manner commemorate Elizur Wright, whose name is so indissolubly connected with the securing of the Fells as a public reservation.

The past year has seen a marked increase in the use of the reservations by the public. In the Blue Hills every pleasant day large numbers of people have ascended Great Blue Hill for the extensive and varied view from the summit. Simple provisions for the checking of bicycles were provided at the foot of the hill during a portion of the year. At Hoosic-whisick Pond tables and seats suitable for picnic purposes were built at several convenient spots. A few boats were put in charge of an officer stationed here, who also had oversight of the two bath-houses on the edge of the pond. These somewhat primitive arrangements for visitors have been used to their full capacity. The roads and bridle paths in the Middlesex Fells are hardly adequate to the amount of travel by carriage and bicycle which the attraction of the scenery brings thither. An illustration of this occurred in a block of over thirty carriages, which happened one day this summer on one of the wood roads, caused by a slight carriage accident at a narrow point in the road. In the winter months the ponds at Stony Brook and Beaver Brook have furnished opportunities for skating to many thousands. From actual count it is known that the ponds at the latter reservation in one week of January last were used by at least three thousand skaters. As many as fifteen hundred people have passed over Echo Bridge in a day to look upon the lovely scenery of Hemlock Gorge. During the summer these two smaller reservations have been visited by large numbers of picnickers, driving parties, bicyclers, botanists, artists and photographers, who have discovered the beauty and interest of these charming spots.

It seems clear that the Commission will be forced to proceed more quickly with the development of its reservations than was originally intended. Nowhere has this been made more apparent than at Revere Beach. It became necessary

in the spring to make some temporary arrangements for the administration of this reservation until the tracks of the Boston, Revere Beach & Lynn Railroad should be removed therefrom. For many reasons it seemed inexpedient to tear down at once the buildings standing between the railroad and the sea, not the least of which was the necessity of providing in some manner for the accommodation of visitors to the beach during the summer months. Therefore the buildings were leased, largely to the former owners, on terms which it was thought would ensure good order. Rules and regulations for the government and use of the reservation were adopted, and the beach placed in the charge of a superintendent and a competent force of police. As a result, the beach was visited by a great number of people, and more largely than ever before by women and children. Good order was maintained, and the absence of any rough element was remarkable. In one week in August it is estimated that the reservation was visited by two hundred thousand people, during which time not a single arrest occurred. It is evident that preparations must be made at once in this reservation for its general use by the public.

The general plan of administration by departments responsible through the Secretary to the Commission has been continued.

The Landscape Architects' report of what they have done and suggested during the year will be found appended.

The work of the Engineering Department has become of so much importance, both in extent and in character, that I have requested the engineer to submit a separate report, which I present herewith. Under his supervision the construction of Fellsway East, which was begun in the fall of 1895, was completed about October 1 of this year. This portion of the Middlesex Fells Parkway is about one mile in length, and extends from Pleasant Street in Malden to the Bears' Den entrance of the Middlesex Fells Reservation. Except where it passes through Fellsmere Park, the property of the city of Malden, it consists of a double driveway, with sidewalks and planting spaces and an electric car reservation in the centre. Although it will not come into full use until the completion of Fellsway, it is already used by a

large number of people in going to and from the east section of the Fells.

The engineer is also in charge of the construction going on in the Mystic Valley Parkway. The driveway from High Street in Medford to Walnut Street in Winchester has been finished to sub-grade. Contracts for building the walks and grading the surface of the parkway outside the driveway have been made, and the work, which has already begun, will be carried on during the winter. It is expected that the driveway will be in condition for surfacing in the early part of the coming summer. Where it crosses the Abbajona River at the head of the Upper Mystic Lake an iron bridge on stone abutments has been built.

Other construction in charge of the engineer has been the building of a short piece of border road along the boundary of the Fells from Bears' Den to Highland Avenue in Medford, near the junction of Elm Street, and the rebuilding of an insecure dam in the Hemlock Gorge Reservation.

In addition to the supervision of the above work, which has been done by contract, the Engineering Department has furnished the necessary data for such road building, grading and like work as has been done by the regular forces in the reservations. During the year an unusually large number of surveys and plans for various purposes, such as takings, abandonments, construction, settlement of claims, search of titles, trial of causes, and for purposes of study by the Commission, has been prepared by this department.

The Claim Department has been placed in charge of George Lyman Rogers, Esq., a member of the Suffolk Bar. Settlements for lands taken have progressed with considerable rapidity, and on the whole on terms which it is believed have been fair both to the owner and the Commonwealth. The policy has been continued of using every reasonable effort to obtain a settlement without litigation, in the belief that such a course is due to the owner of land taken by right of eminent domain as well as of advantage to the State. Over one hundred claims have been disposed of during the year by agreements made directly with the Commission. In many cases where petitions have been brought by dissatisfied claimants settlements have subse-

quently been effected in the Attorney-General's department without trial. Six cases have been tried, and except in one case the amount recovered has not been much in excess of what the Commission considered the fair value of the property.

In the spring of this year a simplification was made in the method of administration of the reservations. During the winter the work of clearing the woods of dangerously inflammable material was continued, and, except in some of the less frequented and therefore less exposed portions of the Blue Hills, was completed in all the reservations by the first of May. A large force of laborers was no longer required, and the office of General Superintendent was therefore abolished. Each reservation was placed in the charge of the local superintendent, who was made directly responsible through the Secretary to the Commission for the conduct of his reservation. He is required to live on the reservation in a house provided for him by the Commission, and acts also as chief of police. Once a week the superintendents meet the Secretary at the office of the Commission, receive the week's pay roll, report on the work done and consult him as to future work. In the larger wooded reservations a small force of laborers has been retained, and with these the superintendents are expected to keep the roads in repair, to protect the reservations against fire and to carry on gradually such work of construction and improvement as can be undertaken with a small force. In the small reservations labor has been employed only as exigency required.

The system adopted is simple, and has proved both satisfactory and economical. The roads have been kept in excellent condition, and in many places improved both as to safety and appearance. No fire of any consequence has occurred. In the Blue Hills the administration road, which runs the entire length of the reservation, has been materially improved by the sloping of banks, and about eleven miles of the old wood roads and paths have been cleared and made passable. This bridle-path work, as it may be termed, serves the double purpose of making the reservation more accessible and at the same time of providing fireguards, by means of which it is possible to confine a fire within a



BLUE HILLS RESERVATION.

A TRIP TO THE

restricted area. The importance of this work can perhaps be realized only by those who have seen how rapidly nature is clothing these beautiful but fire-ravaged hills with a new growth of green woods. Similar work has been done in the Middlesex Fells, and a short piece of road about an eighth of a mile in length has been built to provide a much-needed connection for roads already constructed. The offices of this reservation have been removed from the site of the old Red Mills in Wyoming to a more convenient situation at the head of Spot Pond in Stoneham.

In the Stony Brook Reservation the new boundary line has been cut out as a fireguard, the temporary road through the reservation somewhat improved, a short piece of road constructed to the Summit, a simple rustic bath-house for boys built on the shores of Turtle Pond, all buildings removed except those retained for administration, and the cellar holes graded over.

In the Beaver Brook Reservation the dams of the ponds have been strengthened and considerable grading done. The trees have been protected and cared for and the notable ones suitably labelled.

In the Hemlock Gorge Reservation the old mill buildings on Boylston Street have been torn down and the raceway replaced by a substantial dam. All the houses on the Ellis Street side have been removed, except the one nearest Echo Bridge, which is being altered for use by the superintendent. Paths and rustic bridges have been built in the grove, and what was formally a dancing pavilion has been put in condition to serve as a shelter.

In the Revere Beach Reservation a work of considerable magnitude is being pushed with great vigor; namely, the removal of the Boston, Revere Beach & Lynn Railroad from its present location on the ridge of the beach. In July last an agreement was reached between the Commission and the railroad company, by which the railroad company agreed to construct, upon a new location outside of the reservation, to be provided by the Commonwealth, a new road-bed, and to remove its tracks from the reservation with all possible speed. Steps were immediately taken for obtaining the new location and for providing for separation of grade crossings,

changes in streets, sewers, water pipes and electric railroads, and also for the relocation of a portion of the Boston & Maine Railroad between Crescent Beach and the Point of Pines, which was affected by these changes. These preliminaries have all been arranged and the work of constructing the new line is well advanced. It is expected that the railroad will be running on its new location by May 1 of next year, until which time the development of the ridge of the beach must necessarily be postponed. In the meanwhile, however, eighty buildings standing between the railroad and the sea, not required for purposes of administration, have been removed or torn down, a sanitary has been erected, and quarters provided for the superintendent and police. Surveys and borings have been made, and studies for the permanent development of the reservation are under consideration.

I have prepared and present with this report the usual annual financial statement of the expenditures of this Commission. The items relating to charges for interest and sinking fund requirements, and cost of maintenance and operation, require a word of explanation. The act creating the Metropolitan Park Commission, and all subsequent acts authorizing the expenditures of moneys by it, provide, in substance, that the first cost of the reservations and parkways and the expenses of maintaining the same shall be paid out of the State treasury from the proceeds of bonds issued on the credit of the Commonwealth. To meet the sinking fund and interest requirements on these bonds, and the expenses for the maintenance of the Metropolitan Park System, provision was made for an annual tax levy on the cities and towns of the Metropolitan Park District, the proportion to be paid by each city and town to be fixed for each period of five years thereafter, in accordance with an award of a special commission to be appointed by the Supreme Judicial Court. At the date of the last report a commission had already been appointed for fixing this proportion for the first period of five years, and their report, after several hearings thereon, was accepted by the court in April of the present year. Subsequently, on June 9, 1896, by an act of the Legislature (chapter 550 of the Acts of 1896), this award was set aside,

and any apportionment of the cost of the Metropolitan Park System among the cities and towns of the district was postponed until Jan. 1, 1900. The same act provided that the Treasurer of the Commonwealth should not only charge to the loans already authorized the sums required to meet sinking fund and interest requirements and expenses of the Commission to Jan. 1, 1896, but should continue to charge these items to the loans until Jan. 1, 1900, when the first apportionment among the towns and cities of the district was to be made. In order to determine what sum of money remained available to the Commission after the passage of this act, it became necessary to determine whether it was the duty of the State Auditor to charge the amounts required for sinking fund, interest and expenses to the loan as they accrued, or whether he was required to withhold in addition thereto a sufficient sum to meet such requirements until Jan. 1, 1900. The question was submitted to the Attorney-General, and, acting upon his opinion, the Auditor notified the Commission that he should not only charge to the loans at once \$108,443.67, but should retain in his hands, to cover future requirements for sinking fund and interest charges, the sum of \$633,229.98; in other words, the amount available to the Commission for its purposes was reduced by this act \$741,673.65. The immediate effect of this act was to reduce the sum on hand for general park purposes to an amount less than it is estimated is required for meeting liabilities already incurred. Enough, however, remains available in the boulevard loan to complete the work already undertaken thereunder. The act in question and the opinion of the Attorney-General are printed as an Appendix to this report. I have also appended from the books of the State Auditor a statement more in detail of the payments made on account of the parks loans from Jan. 1 to Dec. 3, 1896.

Respectfully submitted,

JOHN WOODBURY,

Secretary.

FINANCIAL STATEMENT.

DEC. 1, 1895, TO DEC. 1, 1896.

Metropolitan Parks Loan, \$3,000,000 00

Expenditures.

Blue Hills Reservation:—

Land,	\$33,429 33	
Labor,	26,567 21	
Legal,	1,625 84	
Landscape Architects, fees,	700 00	
Landscape Architects, expenses,	138 30	
Topographical survey,	2,510 29	
Engineering,	1,176 66	
Tools, materials, etc.,	121 52	
Expenses of land set- tlements,	253 10	
Telephone line,	165 28	
Boundstones,	115 20	
Annual report,	80 97	
Miscellaneous,	47 50	
Total,		\$66,931 20

Middlesex Fells Reservation:—

Land,	\$265,533 73
Labor,	20,676 53
Legal,	6,333 15
Landscape Architects, fees,	700 00
Landscape Architects, expenses,	220 41
Topographical survey,	1,742 86
Engineering,	2,499 74
Tools, materials, etc.,	211 65
Expenses of land set- tlements,	254 17
Boundstones,	487 00

<i>Am'ts carried forward,</i>	\$298,659 24	\$66,931 20	\$3,000,000 00
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Am'ts brought forward, \$298,659 24 \$66,931 20 \$3,000,000 00

Alterations on office

buildings and super-		
tendent's house, . .	1,344 23	
Annual report, . . .	177 96	
Miscellaneous, . . .	53 15	
Total,	<hr/>	300,234 58

Beaver Brook Reservation:—

Land,	\$2,000 00	
Labor,	1,743 78	
Legal,	112 25	
Landscape Architects,		
fees,	150 00	
Landscape Architects,		
expenses,	88 30	
Engineering, . . .	79 71	
Repairs of North Street,	83 87	
Repairs of dam, . .	20 70	
Boundstones, . . .	50 00	
Miscellaneous, . . .	52 50	
Total,	<hr/>	4,381 11

Stony Brook Reservation:—

Land,	\$97,414 33	
Labor,	3,888 97	
Legal,	3,210 49	
Landscape Architects,		
fees,	300 00	
Landscape Architects,		
expenses,	157 13	
Engineering, . . .	2,663 46	
Expenses of land set-		
tlements,	569 16	
Tool house,	175 00	
Bath-house,	105 00	
Shrubs for office		
grounds,	70 07	
Boundstones, . . .	84 00	
Annual report, . . .	12 96	
Miscellaneous, . . .	119 00	
Total,	<hr/>	108,769 57

Revere Beach Reservation:—

Land,	\$233,561 09
Labor,	496 34
Legal,	2,774 52

<i>Am'ts carried forward,</i>	<hr/>	<hr/>	<hr/>
	\$236,831 95	\$480,316 46	\$3,000,000 00

Am'ts brought forward, \$236,831 95 \$480,316 46 \$3,000,000 00

Landscape Architects, fees,	300 00		
Landscape Architects, expenses,	69 48		
Engineering,	802 20		
Engineering, outside department,	905 03		
Expenses of land set- tlements,	301 67		
Advertising rules,	385 19		
Alterations on office and superintendent's house,	2,237 61		
Sanitary,	2,636 09		
Prison cells,	470 00		
Drinking fountain,	92 69		
Repairs of bulkhead, etc.,	301 30		
Electric lights,	100 00		
Annual report,	54 00		
Miscellaneous,	88 75		
Total,	— — — — —	245,575 96	

West Roxbury Parkway:—

Land,	\$9,864 82		
Legal,	286 95		
Expense of land set- tlements,	80 00		
Total,	— — — — —	9,731 77	

Hemlock Gorge Reservation:—

Land,	\$16,900 00		
Labor,	1,643 35		
Legal,	477 81		
Landscape Architects, fees,	150 00		
Landscape Architects, expenses,	35 73		
Engineering,	754 48		
Rebuilding raceway dam, reservoir gate, etc.,	1,628 68		
Alteration of superin- tendent's house,	800 00		
Boundstones,	40 00		

Am'ts carried forward, \$22,430 05 \$735,624 19 \$3,000,000 00

Am'ts brought forward, \$22,430 05 \$735,624 19 \$3,000,000 00

Painting bridge and			
fence,	26 25		
Rowboat,	24 50		
Annual report,	30 00		
Miscellaneous,	41 60		
Total,	<hr/>	22,552 40	

General expenses:—

Legal,	\$13,061 66		
Landscape Architects,			
expenses,	698 69		
Engineering,	973 55		
Expenses of land set-			
tlements,	846 25		
Annual report,	1,095 40		
Transferred by Auditor			
from expense ac-			
count to Parks Loan,	543 53		
Miscellaneous,	20 00		
Total,	<hr/>	17,239 08	

\$775,415 67

Amount expended to Dec. 1, 1895, . . . 1,187,809 35

Amount expended to Dec. 1, 1896, . . . \$1,963,225 02

Sinking fund requirements to 1896, . . . 18,980 18

Care and maintenance to July 1, 1896, . . . 85,813 46

\$2,068,018 66

Amounts retained by Treasurer to
cover future charges:—

Sinking fund, 1897, 1898 and 1899, . . .	151,184 16		
Interest,	375,551 88		
Balance of \$40,000, appropriation for			
expenses of 1896,	22,337 26		
	<hr/>	2,617,091 96	

Amount available on Parks Loan, \$382,908 04

Metropolitan Parks Loan, Series 2, \$1,000,000 00

Blue Hills Boundary:—

Labor,	\$502 73		
Total,	<hr/>	\$502 73	

Amounts carried forward, \$502 73 \$1,000,000 00

Amounts brought forward, . . . \$502 73 \$1,000,000 00

Middlesex Fells Boundary:—

Construction, . . .	\$2,542 68	
Advertising, . . .	53 87	
Engineering, . . .	5 75	
Total, . . .	<u> </u>	2,602 30

Blue Hills Parkway:—

Labor,	\$189 88	
Legal expenses, . . .	592 52	
Landscape Architects, fees,	350 00	
Engineering, . . .	646 20	
Total,	<u> </u>	1,778 55

Middlesex Fells Parkway:—

Land,	\$3,450 00	
Labor,	24 75	
Construction, . . .	69,726 91	
Legal expenses, . . .	592 35	
Landscape Architects, fees,	350 00	
Landscape Architects, expenses,	46 58	
Engineering, . . .	4,807 89	
Expenses of land set- tlements,	150 00	
Boundstones, . . .	215 00	
Fence,	75 00	
Advertising, . . .	64 81	
Miscellaneous, . . .	128 88	
Total,	<u> </u>	79,632 12

Mystic Valley Parkway:—

Land,	\$22,126 99	
Labor,	218 40	
Construction, . . .	31,852 72	
Abbajona Bridge, . .	10,937 12	
Legal expenses, . . .	820 62	
Landscape Architects, fees,	1,300 00	
Landscape Architects, expenses,	297 88	
Engineering, . . .	4,406 92	
Advertising, . . .	489 98	

<i>Am'ts carried forward, . . .</i>	\$72,450 63	\$84,515 70	\$1,000,000 00
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<i>Am'ts brought forward,</i>	\$72,450 63	\$84,515 70	\$1,000,000 00
Boundstones, . . .	23 40		
Miscellaneous, . . .	116 49		
Total, . . .	<u> </u>	72,590 52	
General expenses:—			
Legal expenses, . . .	\$358 65		
Landscape Architects, expenses, . . .	274 78		
Engineering, . . .	1,854 82		
Engineering outside of department, . . .	200 00		
Expenses of land set- tlements, . . .	841 67		
Annual report, . . .	295 70		
Total, . . .	<u> </u>	3,825 62	
		<u> </u>	
		\$160,931 84	
Amount expended to Dec. 1, 1895, . . .		146,838 10	
		<u> </u>	
Amount expended to Dec. 1, 1896, . . .		\$307,769 94	
Sinking fund requirements to 1896, . . .		3,650 03	
		<u> </u>	
		\$311,419 97	
Amounts retained by Treasurer to cover future charges:—			
Sinking fund, 1897, 1898 and 1899, . . .	22,906 68		
Interest,	61,250 00		
	<u> </u>		395,576 65
			<u> </u>
Amount available on Parks Loan, Series 2, . . .			\$604,423 35
Charles River Loan,			\$300,000 00
Land,	\$138,375 00		
Legal expenses, . . .	3,543 86		
Landscape Architects, fees,	700 00		
Landscape Architects, expenses,	216 78		
Engineering,	273 08		
Annual report,	427 82		
Miscellaneous,	130 16		
Total,	<u> </u>	\$143,666 70	
Amount expended to Dec. 1, 1895, . . .		6,842 06	
		<u> </u>	
Total amount expended to Dec. 1, 1896, . . .			150,508 76
			<u> </u>
Amount available on Charles River Loan, . . .			\$149,491 24

CARE AND MAINTENANCE, DEC. 1, 1895, TO DEC. 1, 1896.

Total expenditure,	\$39,805 96
Salaries,	\$6,766 46
Police,	11,174 76
Travelling expenses,	1,565 53
Law expenses,	81 00
Maps, plans, etc.,	864 98
Rent,	1,775 04
Stationery,	1,234 34
Repairs,	668 03
Telephones,	608 84
Keep of horses,	1,739 88
Repairs of roads,	5,183 57
Watering and lighting,	416 23
Tools, materials, etc.,	2,081 76
Office fittings,	388 57
Postage, etc.,	350 97
Paints,	231 30
Signs,	174 00
Typewriters,	153 75
Horses,	944 00
Carriages, carts, etc.,	395 00
Harnesses, etc.,	323 61
Rebuilding old dams,	719 63
Tool boxes,	127 50
Lumber, drain pipe and coal,	295 31
Revolvers, clubs, etc.,	164 69
Advertising rules,	49 55
Stoves,	37 65
Fertilizers and seeds,	80 52
Sewer connection, Beaver Brook,	63 37
Collecting garbage, Revere Beach,	75 00
Express,	48 55
Water at fountain, etc., Revere Beach,	50 26
Refuse barrels,	55 95
Police badges,	43 25
Field glasses,	16 50
Miscellaneous,	356 61
Total,	<hr/> \$39,805 96

LANDSCAPE ARCHITECTS' REPORT.

To W. B. DE LAS CASAS, Esq.,

Chairman of the Metropolitan Park Commission, Boston, Mass.

SIR:—The undersigned respectfully submit the following report for the year 1896. For convenience of reference the arrangement is the same as in previous years.

PART I. ACQUIRED RESERVATIONS.

A. The Rock-hill or Forest Reservations.

The reasoning which governed the selection for public domains of the areas included in Middlesex Fells, Stony Brook and Blue Hills Reservations may be found in Mr. Eliot's report to the preliminary Metropolitan Park Commission, dated January, 1893; while the carefully considered distribution of these reservations with respect to the boundary of the Metropolitan District of Boston and the centre of population at the State House is described anew in Part II of the present writing. Again, the reasoning on which was founded the choice of the exact boundaries of the lands acquired is outlined in the Landscape Architects' reports for 1893 and 1894. During 1895 the bounds were somewhat modified by additions and subtractions described in the report for that year, and during the year now closing a few further changes have been made, as follows:—

(1) The eastern and western boundaries of Stony Brook Reservation have been relocated through exceedingly rough country in such a way as to make the lines and grades and the work of constructing the boundary roads much easier, though still difficult. It was the completion of the topographical map which enabled this needed readjustment to be studied and accomplished intelligently. For the purpose of securing a convenient entrance to this reservation, plans have also been made, and adopted by the Commission, for extending

the eastern and southern boundary roads down stream along Stony Brook, as far as Gordon Avenue, Hyde Park.

(2) For the sake of saving purchase money, certain lands have been ordered by the Commission to be returned to five different private owners on the borders of the Fells Reservation. An expression of opinion was asked of us in each case. To us it seemed that while nothing valuable was lost in one case, and only local injury was done in two cases, because the lands returned lay below the cliffs of the plateau, in two other cases, where the actual brink of the tableland was abandoned to the previous owners, considerable portions of the reservation suffered a diminution of value. Buildings constructed on these two parcels of land will, unfortunately, be visible from even remote interior portions of the reservation; and the valuable impression of unbounded extent will thus be, in part at least, destroyed. For the same reason another abandonment has been made by the Commission to the owners of the large island of private land in the midst of the eastern half of the Fells Reservation. In this case a new boundary line was devised which will eventually prove suitable for a boundary road.

(3) No additions to or subtractions from the area of Blue Hills Reservations have been made during the year, and there are only one or two small additions which need to be made.

With regard to such active work as has been done within the forest reservations during the year, only occasional consultations and suggestions have been asked of us. The demolition of the "red mills" in the Fells and the removal of the temporary headquarters of the reservation to the Frost Farm, the demolition and removal of buildings near River Street and Washington Street at Stony Brook Reservation and the continuation of the opening out as bridle paths of some of the old wood-roads of the Blue Hills, have seemed labors well worth accomplishing. The winter work of clearing away the too inflammable accumulations of dead wood—a work which was finished in the Fells and Stony Brook woodlands—was watched sufficiently to see that it was done in accordance with directions given in

previous years. Certain views respecting the desirable spirit to be cultivated in the “keepers” or police of the reservations—views founded on knowledge of experience elsewhere—have been communicated to the Commission, and in accordance with these views the patrolmen have been uniformed entirely different from city policemen. Conferences have been had with the engineer with reference to profiles and working drawings for Fells boundary roads ordered by the Commission to be constructed between Pond Street, Stoneham, and the end of Emerson Street, Melrose. A preliminary plan has been made for a necessary transverse traffic road, designed to connect East Dedham with Hyde Park by crossing Stony Brook Reservation nearly on the line of Glenwood Avenue extended. A comprehensive scheme for guide-boards for the preliminary roads of the reservations has been devised and submitted. A botanical list of the plants of the reservations, edited by Mr. Walter Deane of Cambridge, from the collections of many cordially co-operating botanists, was made up and published in the spring. It will interest all botanists to watch for the possible return of many long since evicted plants. The wild birds and animals of the reserved and protected woodlands have already greatly increased in number.

A preliminary report with respect to such work as might first be attempted in the living woods of the reservations was submitted early in the year, but no active work has yet been ordered. For reasons summarized below it is, indeed, our opinion that, except for certain rescuing work, it will be wiser to leave the woods alone, rather than to labor in them without regard to carefully considered general plans.

Lastly, by direction of the Commission, routes for two important reservation roads have been planned after study in the field and on the topographical maps: one intended to lead from that part of Harland Street, Milton, which is included in the Blue Hills Parkway, to the head of Marigold Valley in Blue Hills Reservation; the other designed to lead down through the central valley of Stony Brook Reservation from Washington Street, Boston, at the terminus of the West Roxbury Parkway, to Glenwood Avenue, Hyde Park. The first of these roads will be the extension of the

Blue Hills Parkway into the heart of the hills; the second will be the extension of the strictly pleasure driveway of the Boston Parks as far as Hyde Park on its way to the Blue Hills. Neither of these roads has as yet been ordered constructed, and, for reasons stated below and corresponding to those just mentioned in connection with work in the woods, we are confident that neither these nor any other permanent roads ought to be built in advance of the study and official adoption of a comprehensive programme embracing both the means of saving and heightening the value of all the scenery in the reservations, and the means of making that scenery agreeably accessible.*

While little important work has been accomplished in the reservations during the year, the gathering of information on which to base comprehensive plans for guiding work in the future has gone on steadily. As the publication in 1891 of a general topographical map of the whole Boston district first made possible the devising of a comprehensive scheme for a Metropolitan Park System, so the completion of the topographical maps of the separate forest reservations has now first made it possible to study intelligently schemes for their gradual development as treasuries of accessible and beautiful landscape. The contracting surveyors, Messrs. French, Bryant & Taylor, finished the maps of the Fells and Blue Hills Reservations early in the year, and the map of Stony Brook Reservation was completed by the Commission's engineering department a few months later. The original sheets of these maps are drawn to the scale of one hundred feet to an inch, and show contour lines for every five feet difference of elevation. The two maps obtained by contract are composed of fifty-eight sheets, and cloth tracings, as well as the original drawings, were supplied by the surveyors. The cost of these surveys averaged \$2.74 per acre,—a very low price, considering the complexity of the country covered and the quality of the work done. Lithographed reproductions of the combined sheets, reduced to the scale of five hundred feet to an inch, have furnished convenient working maps of the reservations, while still more reduced

* See the Landscape Architects' report to the Commission, dated Dec. 31, 1894. (Pub. Doc., 1895, No. 48, pages 34-37.)



BLUE HILLS RESERVATION.

THE ADMINISTRATION ROAD.

copies will hereafter serve as guide maps for the use of the public.

By means of sun prints from the full scale tracings, as well as copies of the lithographed maps, the further mapping and study of the existing condition of the woods and ground-cover of the reservations have gone forward, until they are now so far advanced that a detailed report on the present state of the woods, illustrated by maps and photographs, will soon be completed. By means of reference numbers entered on the maps at the places to which the corresponding notes refer, every noticeable variation in the existing vegetation has been duly recorded, while the areas occupied by the principal types of vegetation, such as meadow grass, pasture turf, pasture shrubbery, seedling forest, young sprout growth and mature sprout growth have been indicated on the maps by flat tints. Thus, in addition to the topographical survey and map of each reservation, there has now been secured a forest survey and map.

But it may be asked, Why all this preparation? Is it clear that it is necessary, or even advisable, to attempt to plan in advance how vegetation ought to be controlled and directed, and where roads ought eventually to be built? Why not swing the axe and build roads from time to time, as circumstances may seem to dictate or occasion require?

To us it seems that a due regard for the high purpose of public reservations, as well as a due regard for the economical fulfilment of that purpose, prohibits piecemeal, unrelated and hand-to-mouth work in such domains, precisely as it prohibits planless and disconnected work for the accomplishment of any and every large purpose that can be imagined, — the purposes of sewerage and water commissions, or of trustees of art museums and public libraries, for example. Park commissions are the trustees of the people's treasure of scenery, they are responsible for the safe-guarding and the increase of this treasure, and they are charged with the duty of making it most effectively accessible. Being trustees, they cannot safely proceed planlessly, any more than can those who are charged with guarding and making accessible the people's treasure of books and pictures, or with providing the people's drinking water. The

devising of comprehensive and far-seeing plans or programmes of procedure is for park commissions, as for all other executive bodies, the most necessary, arduous and responsible labor which they are called upon to perform.

It is sometimes said that the following of "general plans" will induce a regrettable formalizing of the scenery of the reservations now in question, or a lamentable taming and smoothing of what is now wild and rough. That will, however, depend on the nature of the plans adopted and the desires of the Commission which directs the planning, precisely as the style of the architecture of a church or library depends on the desires and taste of the trustees in charge of the work. If it is desired to preserve wildness and enhance the natural beauty of reservations accessible to multitudinous populations, that is precisely the thing that requires the most considerate and prophetic planning.

It is sometimes said that the mere existence of general plans tends to an extravagantly rapid prosecution of active work. There is, however, no more real danger of excess of expenditure when following a definite and comprehensive programme than there is when proceeding hap-hazard, while the following of plans gives assurance that every dollar will count toward worthy results. This, also, is a matter which lies entirely in the control of the directing body.

Our survey of the present condition of the reservations has brought out this fact, among others, — that the most pleasing existing scenery is a product of men's work in making clearings and thinnings, pasturing large areas, encouraging seedling growths and so on; and that, if even the present meagre degree of variety in the landscape is to be merely preserved, intelligent attention will need to be continually given to the control of the tree growth and the ground cover. The constant care which will be required for the preservation and encouragement of the most appropriate types of vegetation has been touched upon in previous reports. It is sufficient to say here that the studies of this year have only confirmed us in the belief that to leave the woods alone would be only to lose scenery and develop monotony, and that to preserve and enrich this scenery a well-considered programme of work must be devised for controlling and

guiding the vegetation of the reservations. Whatever is attempted ought, however, to be related to the prospective roads and other points of view, from which the scenery of the future is to be commanded. If, for example, broad-spreading trees are now encouraged to occupy a certain valley, it will prove hard to remove them when it is discovered some years hence that a vista which is obtainable only through that very hollow would be really more valuable than the trees. To proceed to "improve" the woods without reference to the positions designed to be occupied by the permanent roads will plainly result either in much double expenditure, or else in failure to secure that varied and beautiful scenery which the public has a right to expect the reservation roads to exhibit.

Conversely, it is just as true that the placing of roads ought to be largely governed by the plans adopted for the control of vegetation. If roads are devised independently there is danger that they will either seriously mar the landscape or else not effectively exhibit it. The existing preliminary roads of the reservations, opened on lines which served well the wood-choppers' commercial purposes, fail to meet the present purpose of the reservations in both of the two ways just mentioned; and for this reason, and because they have had lines and grades, they ought to continue to be regarded as in great part temporary. To spend money in widening them or in improving their grades, to build permanent roads without regard to any programme for developing the forest scenery, or to attempt woodmen's work without reference to any road plans, will be to fix, without consideration, permanent features which will only obstruct the people of the Metropolitan District in obtaining from these reservations that measure of refreshing and uplifting enjoyment which alone can justify their great cost and their excision from the taxable area.*

B. The Lake, Brook and River Reservations.

The report of the Landscape Architects to the preliminary Metropolitan Park Commission proposed the acquisition of

* See the previous annual reports of the Landscape Architects (Pub. Docs., 1895, No. 48, pages 34-37; 1896, No. 48, pages 39, 40).

as much as might be possible of the banks of the three main rivers of the Metropolitan District, the Mystic, the Charles and the Neponset. Two and a half miles of the banks of the Mystic Ponds and the Upper Mystic or Abbajona River were acquired by the Commission in 1895, largely by gift; all but two miles of the banks of the tidal portion of Charles River have also been secured by the Commission, the Cambridge Park Commission and certain semi-public institutions, and a strip nearly half a mile long on the bank of the Neponset above Mattapan has been given into the keeping of the Commission during the past year. With the promise (should they prove desirable) of public or rentable freight landings on the navigable tidal streams, nobody now questions the great benefits to be derived from public ownership of these river margins.

As was noted in our report for last year, the Mystic River Reservation (or Parkway, as it is officially named) begins and ends illogically, while it is, also, dangerously incomplete in that the western banks of the Mystic Ponds are not controlled by the Commission. Plans for a roadway thirty-six feet in width and extending the whole length of the reservation, for the accompanying footpath, for a large amount of necessary side-slope and water's-edge grading, and for several banks to be constructed to shut out the view of the Lowell Railroad, have been prepared and delivered to the engineer, under whose direction the work of construction is now proceeding. A large part of the route of this roadway has been dug over at different times for the old Middlesex Canal, the Mystic Aqueduct and two great sewers, so that the area of raw ground to be resurfaced is uncommonly large.

The boundaries of Charles River Reservation were discussed in our report of last year, and no changes have been made during the present year, except that the line has been improved at one place close to Watertown village by moving it inland to coincide with the line of Wheeler Street. Plans have been made and submitted for a desirable, though narrow, additional acquisition of land on the Newton bank below Lemon Brook, but no action on this plan has been taken. Several abandonments have been proposed at different times, for present economy's sake. In our opinion, however, none

BRIGHTON

SIDE

EXTREME HIGH WATER
EXTREME LOW WATER

THE NATURAL TIDAL RIVER

EXTREME HIGH WATER
EXTREME LOW WATER

THE TIDAL RIVER WITH WALLED SHORES

PROPOSED PERMANENT WATER LEVEL

THE RIVER CONVERTED INTO A FRESH WATER STREAM WITH BUSHY OR BEACHED SHORES

EXTREME HIGH WATER
EXTREME LOW WATER

THE TIDAL RIVER SHOWING TEMPORARY TREATMENT OF CAMBRIDGE SHORE

CAMBRIDGE

SIDE

TYPICAL CROSS SECTIONS OF CHARLES RIVER
TO ACCOMPANY REPORT OF OLMSTED, OLMSTED & ELIOT, DATED DEC. 1, 1896

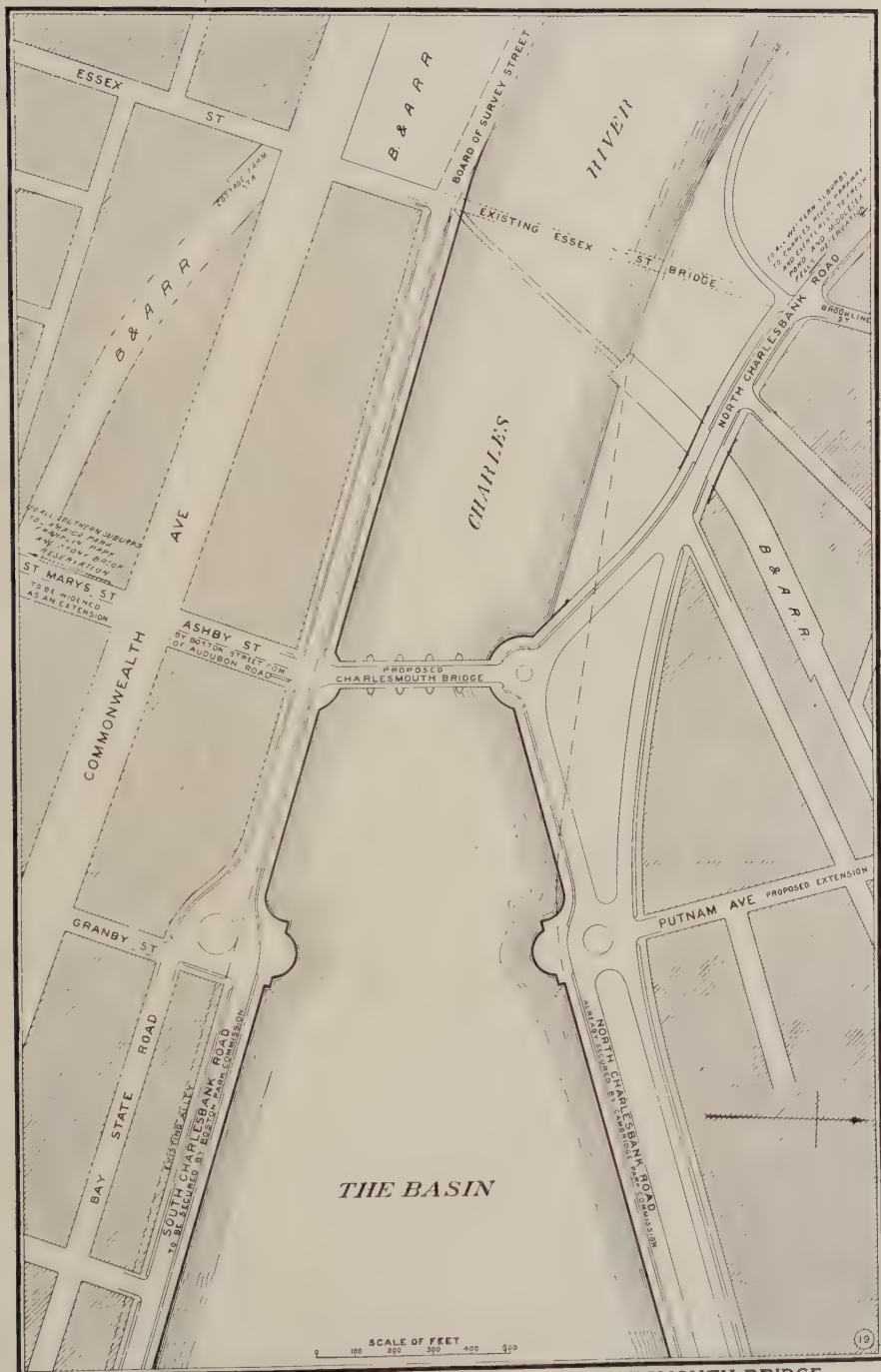
can be made without too great a sacrifice of the essential value of the whole reservation. Private industrial frontages interspersed between the irremovable Albany Railroad yards near Cottage Farm, and the Abattoir in Brighton, would greatly detract from the effectiveness and value of the remaining river-bank parkways, which must depend upon their continuity for their appearance, as well as for their usefulness for travel. We have from the first maintained that all the purchasable frontage should be purchased, and then that such portions as may be rentable should be rented to private persons during the years which may intervene before the construction of the river-bank roads or parkways may be demanded. Should occasion require, public freight landings may be provided, as above remarked, when construction is once undertaken.

On the Cambridge side of the river, between the Cambridge Hospital and Boylston Street, the construction of the North Charlesbank Road, as it may perhaps be called, is already begun. The natural river bank was here a salt marsh, subject to occasional flooding by the tide, as illustrated in the uppermost of the accompanying typical cross-sections. Not knowing whether the river will eventually have to be sea-walled, as in the second section, or whether, following the building of a dam, it may be green-banked, as in the third section, the Cambridge Park Commission has adopted the temporary mode of grading the bank, illustrated in the fourth cross-section. When it is remembered that there are, above Cottage Farm, some ten miles of salt-marsh river bank which must sooner or later be made usable, the obvious economy, as well as the greater usefulness and beauty, to be secured by the scheme which substitutes a short crosswise wall or dam near the river's mouth for ten miles of wall leading up stream and back again, cannot be questioned or disguised. Watertown, and part of Newton, with Brighton, and especially Cambridge, are now positively suffering for a decision of the question of dam or no dam. If there is to be no dam, the river ought to be dredged; if there is to be a dam, much of the dredging may be safely omitted; and so on. It is to be regretted that the joint commission which originally proposed the dam went out of existence with the

filing of its report. A project, no matter how worthy, which requires the co-operation of four municipalities, three park commissions, the State and the United States, cannot be expected to accomplish itself.

Meanwhile, and whether Charles River is to be relieved of the invading tides or not, at least the location for an adequate and handsome connection between the existing Muddy River Parkway and the proposed Charles River Parkway ought to be secured before the construction of buildings makes it too costly. As was pointed out in a report addressed to the Commission early in the year, such a connection would greatly enhance the value of the Metropolitan as well as the Boston and Cambridge parkways; and, as was then suggested, it can best be secured by widening St. Mary's Street and Ashby Street, as an extension to Charles River of the existing Audubon Road of the Boston Park System. It is about at the end of Ashby Street that the narrow Charles River empties into the broad and long Charles River basin; and here, and not at Cottage Farm, is the natural place for a bridge, to accommodate the travel which the great basin inevitably inconveniences. The accompanying diagram illustrates how such a Charlesmouth Bridge might span the stream in a manner which would terminate the basin symmetrically and architecturally; while the same diagram makes it plain that such a bridge would be an improvement over the Cottage Farm Bridge, not only for the users of the parkways, but also for ordinary traffic. It is already plain that this head of the basin is to be an important focal point of greater Boston, — a point from which broad parkways, not to speak of lines of traffic, will lead eastward along both banks of the basin and westward up the Charles to Watertown. It is also quite within reason to expect that a branch from the Charles River Parkway will lead northward by Fresh Pond to Middlesex Fells Reservation, as the Boston and Brookline Parkway now leads southward to Franklin Park and Stony Brook Reservation. So much the more reason, then, for an adequate bridge at the head of the basin, and for the extension of Audubon Road as a connecting link.

At Hemlock Gorge Reservation one small but valuable



SUGGESTIVE SKETCH FOR LOCATION OF CHARLES MOUTH BRIDGE
 TO ACCOMPANY REPORT OF OLMSTED, OLMSTED & ELIOT, DATED DEC. 1, 1896.

addition has been made, the removal of several buildings has been happily accomplished, a few short bridges have been built and a little landing beach formed, under the direction of the engineer, where a mill-race formerly began. Our share in the guidance of these works has been unimportant.

At Beaver Brook Reservation a complete record has been made, by order of the Commission, of the remarkable trees and their dimensions, and small zinc labels, bearing their English and Latin names, have been attached to them. This reservation is a place of pilgrimage for botanists, teachers and school children. The town of Belmont has begun the widening of Mill Street, in accordance with a decree of the county commissioners. We endeavored, but without success, to secure a modification of the ordinary arrangement, which places sidewalks immediately adjacent to street roadways, — an arrangement which has little foundation in reason when the abutting lands are public domains. Had we succeeded, some part, at least, of the peculiar beauty of this famous old road could have been preserved, but now it will be commonplace or worse until new trees can grow.

We note that parts of both these small reservations are already badly trampled, and that the public which resorts to them is forming habits which it will be difficult to correct when the need of correction at length becomes all too evident. No general plan having been determined on for either of these reservations, we are somewhat at a loss to advise about work which it is from time to time proposed to do in them. We would respectfully suggest that prompt attention ought to be given to the consideration of the future of both reservations, and to careful planning for eventually meeting the obvious requirements of that future.

C. The Bay and Seashore Reservations.

The two reservations of this most valuable class thus far acquired both lie north-east of the State House. To the comparatively remote and small King's Beach no attention has been given by our office during the year; but to Revere

Beach and the problem of its adaptation to public use much study has, by direction of the Commission, been devoted.

Looking forward only a few years, it is obvious that a traffic and electric car route will be needed to connect Lynn with the shore towns lying between Lynn and Boston. The existing Ocean Avenue, which runs parallel with Revere Beach, furnishes about one mile of such a highway; but this avenue turns into Revere Beach Reservation at both ends in a manner which will need to be corrected. From Revere Street to the Point of Pines (and so eventually to Lynn) Ocean Avenue should be laid out as a traffic street, parallel with the reservation and necessarily adjacent to it, since the new location of the steam railroads will not permit placing the avenue even a shallow block in the rear. Southward, also, Ocean Avenue should be extended entirely clear of the reservation, and, presumably, along the route of the present electric car line. If these extensions of Ocean Avenue are not made, the necessary regulations limiting traffic, and particularly car traffic, within the bounds of the reservation, will work considerable public inconvenience. Therefore, the location of these important connections should be acquired by the town of Revere or the county of Essex before land becomes too high priced.

Concerning the boundaries of Revere Beach Reservation, it is to be noted that the long land boundary, on which a continuous row of buildings will eventually front, has from the first been designed to be a curve, conforming as closely as possible to the natural and singularly beautiful sweep of the beach itself. The legal necessity of wiping out certain public and semi-public streets and footways has resulted in obscuring the desired curve for the present, but it ought to be restored before any new buildings are built on lines not in harmony with it. This is a case where some returning of land to private ownership will distinctly improve the future appearance of the reservation. Of the abandonment to its former owners of the sea-front of the Point of Pines — one-fifth of the original length of the reservation — there is nothing to be said, except that the Commission deemed it necessary because of the lack of money wherewith to pay for the property acquired. It is not so much the loss of length

of sea-beach that is regrettable, as it is the possibility of the occupation of the conspicuous point in question by disfiguring industrial establishments.

Coming to the consideration of the Reservation itself, it is found, now that the encumbering buildings have been removed, that its value consists essentially in its broad and unobstructed view of the ocean and its own open length and continuity of curve. No spectacle more markedly contrasting with the ordinary sights of city streets can be imagined, and it follows that no place or spot can be better worth purchasing for the use and enjoyment of the people. As we understand it, it was in order that the general public might have free access to this spectacle that a million dollars was appropriated by the General Court for the acquisition of this Reservation and the removal of the railroad and buildings.

The problem is, then, to devise adequate approaches to this sea-beach and its panorama, and to provide all conveniences for the use of the visiting public, without destroying or even impairing that complete openness and continuity in which the value of this public domain consists.

Unfortunately, the beach is found, upon examination, to be what a geologist might properly call a weak beach; in other words, it is a beach which storm waves have been accustomed to raise up and drag down and even override pretty much as they pleased. The level of average high water being called grade 10 (that is, ten feet above mean low water), the waves not infrequently push seaweed up the beach as high as grade 17. Even the highest part of the crest of the beach is no higher than grade 20. The surface of the salt marshes in the rear of the beach stands at about grade 11. The most important fact is this, that the line to which ordinary storm waves reach is at present only from fifty to one hundred feet distant from the inland boundary of the Reservation. It follows that no roads, promenades, terraces, shelters, bathing establishments or other structures can be placed more than this distance from the boundary unless they are supported on retaining walls or pile wharves; while, if they are so supported, they will at once intrude upon and damage the invaluable simplicity and continuity of

the beach. Moreover, wharves are too perishable as well as too ugly in themselves; while walls, receiving the blows of the surf, will cause the waves to excavate the beach in front of them, and to throw up spray which will sometimes drench the whole width of the Reservation. Thus, for the sake of surety, safety and convenience, as well as for the sake of aspect or effect, it is desirable to allow the storm waves room to run up and expend their strength harmlessly, and to limit all construction to the first hundred feet from the boundary line.

Since the whole length of the boundary will be occupied by buildings fronting the Reservation, and since many of these buildings will be populous hotels, apartment houses, summer shops and refreshment stands, an ample sidewalk adjacent to the boundary line is a first necessity. The adopted plan makes this sidewalk twenty feet wide. As in the case of the Boston parkways, permission to open private entrances into this sidewalk should be granted only to such abutters as will agree to restrict their land against over-high buildings, obnoxious occupations and flaming advertising.

Since many people will reach the reservation by carriages and bicycles, and since no vehicles can be safely or properly allowed to mingle with the crowds on the beach itself, it seems necessary (though by no means desirable, from the point of view of foot passengers) to place next the sidewalk a roadway, which the adopted plan proposes should be forty feet in width. Lastly, and chiefly because high tides will drive the people from the beach, it seems desirable to construct a promenade on the seaward side of the roadway; and this, like the sidewalk, is proposed to be twenty feet wide. The elevation of the roadway has been fixed at grade 19, because the shape of the beach is such that to raise the grade any higher would involve a sea-wall to hold the promenade, as well as large expenditure for filling material.

When appropriately graded, this road and promenade will, for the first time, provide a suitable and agreeable approach and vantage ground from which to obtain the broad view of the ocean, and the different, but equally valuable, along-shore view of the curve of the beach, with the waves moving landward in ranks. The outer promenade, built to conform

to the natural sweep of the beach, fitted at intervals with low-roofed shelters for picnickers, and commanding throughout its length both the seaward and the along-shore views in their entirety, will form a strikingly handsome and valuable place of public gathering, provided always that no constructions involving obtrusively projecting walls or pilings are permitted outside of it.

Last summer the public had access to a projecting wooden bulkhead or terrace, which had formed an unstable foundation for a summer hotel, and the place was naturally often crowded, partly because it provided the only smooth and level standing room on the shore near the steam railroad station and the electric cars, and partly because its projection seaward enabled visitors to look past the many wharf buildings which still occupied that section of the beach. Such considerably projecting terraces or piers form, on built-up water fronts, the only means of access to the desired views, but on completely open shores they are as unnecessary as they are disfiguring, and, on sea fronts, insecure. In the case of Revere Beach, broad sea-walled "plazas" outside the promenade would only injure the views which the promenade alone, without any wharves or terraces, will command completely and most satisfactorily.

Thus, for the enjoyment of the general public, who will come to the Reservation to view the sea, the waves and the shore, the roadway, with the promenade and its occasional shelters, will provide all necessary conveniences. But what arrangements can be made for the convenience of those of the public who may desire to bathe in the sea? At this writing the Commission has not determined upon the course to be pursued, but we may be permitted to state our own views as follows:—

Supposing, for a moment, it were deemed advisable to exempt public bathing establishments from the operation of the principle that walls ought not to be permitted to project much beyond the promenade, it would then be easy to devise a structure to stand upon a sea-wall and to consist of a central office building, where suits and towels would be given out to men and women, who would then pass from this building to dressing rooms arranged along roofless alleys

to the right and left respectively. To make the dressing rooms as compact as possible, they might be built in two low stories. To properly control the use of the dressing rooms, access to the beach from the men's stack or yard of dressing rooms and from the women's stack should be by only one opening for each, the return being made through the same opening. These openings must be watched and used only by persons in bathing costume. After dressing, the way out would lead again through the central office building. Such an establishment, providing five hundred dressing rooms for men and three hundred for women, might, we find, be compressed into a space which would measure three hundred and sixty feet along the promenade and extend only sixty feet seaward. This length is fortunately short enough to enable the structure to be placed between streets, so as not to interfere with the sea view from the ends of the streets. Duplicate establishments might be built in the future between the ends of other streets, should occasion require.

If it were absolutely necessary to place bathing facilities in front of the promenade, structures of this type and these dimensions, kept low and inconspicuous, would be as unobjectionable as any that can be imagined. But, as a matter of fact, it is by no means impracticable to place the public bathing establishments, along with the hotels and private buildings, on the landward side of the road and sidewalk. The extension of the single outlets from the stacks of dressing rooms as subways running under the road and promenade is the only additional construction which this position would necessitate. By this arrangement bathers would enter the office of the bathing establishment, either directly from the electric cars in Ocean Avenue or from the reservation's sidewalk, and their passage to the beach through the airy (because open-ended) subways would involve only about forty additional footsteps in each direction. So entirely practicable is this scheme and so little would it inconvenience bathers, that we are convinced that it ought to be adopted in preference to any structure projected onto the beach. An alternative scheme, which would, in a measure, sacrifice the driving and cycling public for the sake of the bathers, would consist in bending the roadway to the rear,

and placing the bathing establishment where the road would naturally lie at the top of the beach. The preservation of the complete and impressive continuity of the open beach, to obtain which nearly a million dollars has been spent, seems to fully warrant the expenditure of some additional thousands for the purchase of land on which to place either the bathing establishment or the roadway in the rear of the present boundary of the reservation, particularly as this land will not cost more than the solid sea walls which would make a necessary part of the first plan.

It is sometimes said to be useless to spend time, pains and money in making sure that public domains are made as beautiful as they can be made, because "ordinary people will never appreciate the difference." But what if fine results are not accurately valued and their causes discerned by the multitude? We all of us experience and enjoy sensations and emotions, the causes of which are unrecognized and even unknown. When he comes into the presence of unaccustomed beauty or grandeur, the average man does, as a matter of fact, consciously or unconsciously experience a reaction, which is of benefit to him. It is on this account, and not in order to satisfy competent students of æsthetics, that our democracy has ordered the setting apart of Revere Beach and the other reservations. It is precisely for the sake of "the common people" that these reservations ought to be made to exhibit their grand or beautiful scenery just as effectively as possible. The principle that the most effective arrangement is none too good for "the common people" already governs the trustees of our schools, libraries and art museums. It has, also, been fully illustrated in many public parks. For example, Prospect Park, Brooklyn, includes a long and lovely meadow, made at large expense by joining fields together, and now extremely beautiful by reason of its great and unbroken expanse, its simplicity and its unity. The Playstead in Franklin Park, Boston, is another fine public meadow, which, like the Prospect Park meadow (and like Revere Beach), is chiefly valuable for its effective breadth, openness and continuity. Both these fields are used by tennis, croquet and ball players (as Revere Beach must be used by bathers); but are the buildings which are necessary for

the convenience of the players allowed to intrude themselves so as to shatter the effect of the meadows? On the contrary, they are in each case pushed back into the edge of the bordering woods, where they are not quite as convenient as they might be, but where they are, nevertheless, reached easily enough. At Franklin Park the players pass to and from their lockers and wash rooms by a subway which leads under the spectators' overlooking terrace, and by this means the convenience of all classes is well served, while the beautiful breadth of the meadow is preserved.

It seems to us that the preservation of the complete openness of Revere Beach is more important than the preservation of the openness of this meadow by as much as the ocean panorama and the view of the sea strand is rarer and grander than the landscape of a field.

PART II. DESIRABLE RESERVATIONS.

When studying to determine what lands would need to be removed from private ownership in order to provide the metropolitan population with adequate, agreeable and nuisance-preventing open spaces, close attention was necessarily given to the equitable distribution, as well as the suitability, of the suggested areas. Before attempting to suggest such additional spaces as might be profitably acquired should the community desire to invest in them, it will be well to point out just how the reservations already secured are related to the broad circle of the Metropolitan District and to its centre at the State House.

The accompanying circular diagram sets forth the facts as plainly as possible. In the middle of the district, and extending westward from the central Charles River Basin, lie the river-bank reservations of the Cambridge and Metropolitan park commissions, the possession of which will enable the metropolitan community to secure agreeable approaches to Boston from the westward whenever it is so minded, and to defend itself from dangerous nuisances meanwhile and always. North-north-west from the State House and between five and eight miles distant lie the Middlesex Fells, forming a reservation capable of serving for the northern suburbs all the good purposes served in the

DIAGRAM OF THE PARKS & PARKWAYS OF THE BOSTON METROPOLITAN DISTRICT

TO ACCOMPANY REPORT OF OLMSTED, OLMSTED & ELIOT, DATED DEC. 1, 1896.



southern suburbs by Franklin Park and the new Stony Brook Reservation, which latter open spaces lie the same number of miles from the State House in a corresponding, or south-south-west, direction. Of the small Beaver Brook and Hemlock Gorge Reservations, the first lies five miles south-west from the nearest corner of the Fells, and the second the same number of miles north-west from Stony Brook. It is also five miles from one to the other. Lastly, the Blue Hills and the Lynn Woods Reservations mate closely one with the other, both lying between the circles swept by the eight-mile and the eleven-mile radii from the State House. Revere Beach Reservation alone, lying, as it does, north-east of the State House, is not balanced by any similar reservation on the shore to the south-east of the centre of the district. On the other hand, Revere Beach fronts the open sea, and is, on that account, more valuable as a public domain than any part of the near south-east coast, which fronts on the bay only.

Such being the present remarkably equitable distribution of the principal existing open spaces, what additional spaces, if any, will it profit the Metropolitan District to acquire and control?

In the first place, it seems to us that Lynn Woods Reservation, bought and preserved as it has been by Lynn alone, ought to be rounded out to suitable boundary lines at the cost of the Metropolitan District. It is true that population is yet sparse about the outer borders of Lynn Woods, but so it is about the Blue Hills, while Lynn is topographically related to the woods exactly as is Quincy to the hills. In other words, if the Blue Hills are justly an object of metropolitan expenditure, so also are the Lynn Woods.

In the second place, it seems to us that metropolitan money may advisably be invested in acquiring water rights, easements and river-bank lands along the remarkably beautiful boating course of Charles River, between Waltham and Newton Lower Falls. This portion of Charles River, three miles in length, lies, like the Lynn Woods and the Blue Hills, just within the sweep of the eleven-mile radius from the State House. It also lies almost exactly west of the centre of the district, while the Lynn Woods and the Blue

Hills lie north and south respectively. Thus no new reservation could possibly be more equitably placed.

In previous reports it has been argued that the Metropolitan District and its constituent cities and towns would fend off evils, and, indeed, actually profit, sanitarily, pleasantly and financially, if the banks of all the larger streams and brooks (so far as they are not occupied by important industries) could be secured and controlled by public authorities. The cities of Newton and Medford, and Boston and Brookline, acting jointly, have already acquired control of certain streams, under the guidance of their municipal engineers. The separate cities ought naturally to attend to the small or local streams, while the Metropolitan Park Commission, representing the co-operating cities and towns of the whole district, might have charge of the control of the largest streams for the common benefit. The reservation of the Charles River boating course, as proposed above, and as further discussed in our report to the joint commission, dated Dec. 9, 1895, would be an important step in pursuance of this enlightened public policy.

In the third place, it seems to us that, when money is available for investment in reservations, or when gifts of land and flats are offered, the sea-shore domains of the Metropolitan Park Commission might be extended with advantage. Private and exclusive ownership of such sea and bay shores near great cities as are not adapted to commercial purposes is as little conducive to the public weal as private ownership of stream banks in crowded neighborhoods. On the other hand, public ownership tends to directly benefit not only the health of the whole community within reach of the shore, but also property for a considerable distance inland. Accordingly, we believe that it will profit the community to possess itself of water fronts as opportunity may offer, and of strips along the shores of Quincy Bay in the first instance, because the shores of this bay are related to the centre of population of the district exactly as the already acquired Revere Beach Reservation is related to the same centre. The Point of Pines, at the far end of Revere Beach, is eight miles from the State House; so also is Nut Island, the extreme promontory of Quincy Bay. Revere Beach is appropriately made a public reserva-

tion, because its exposure to the sea prevents its occupation for commercial purposes. The shores of Quincy Bay may as appropriately be dedicated to public enjoyment, because the shallowness of its waters similarly precludes commerce. Deep-water frontages of ample length are found in the adjacent estuaries of the Neponset and Weymouth rivers.

It should be specially noted that the public ownership and control of non-commercial strips of land along river banks and seashores is something very different from the public ownership of ordinary "parks." Parks like Franklin Park are valuable, indeed, but river-side and seashore strips provide access to great stores of fresh air and refreshing scenery without removing any large area from the tax lists. They do, indeed, quickly pay for themselves, because practically the whole value of the lands acquired is added to the next adjacent private lands. They, negatively, prevent the depreciation of the potential values of surrounding lands which is so generally caused by "cheap building" on freshwater and tidal shores. They place the control of the trunk lines of surface drainage under public authority, and so defend the public from such costly expenditures for the prevention of floods as Boston has been driven to along Stony Brook in Jamaica Plain and Roxbury. Reservations of this class are primarily desirable, not for æsthetic or sentimental, but for eminently practical, reasons; while their first cost is properly to be regarded as an intelligent investment, rather than an extravagant expenditure.

PART III. METROPOLITAN PARKWAYS.

It will be remembered that, when the Metropolitan Park Commission was first required by the Legislature to spend an appropriation of \$500,000 in opening parkways, a great variety of conflicting schemes were at once proposed, comprising schemes for making parkways of existing streets in this or that neighborhood, schemes for constructing roads for the benefit of this or that body of unimproved real estate, and schemes for so distributing the expenditure that the treasuries of each city and town of the district should benefit directly from some (however small) enhancement of taxable values. In reports addressed to the Commission during 1894, we argued, on the contrary, that the selection

of the routes of parkways ought to be considered at least as comprehensively as was the selection of the sites of the reservations; that parkways built by the Metropolitan Park Commission ought to be approaches to the reservations from the populous centre of the district; and that they ought to provide, in addition to roadways for the use of carriages and bicycles, "separate passageways for the cheap, agreeable and rapid transportation of the multitude by electric cars." Designs for the Blue Hills and Middlesex Fells Parkways, based on this reasoning and approved by the Commission, were published and discussed in our report of last year. The present year has seen the land secured for both these ways, and now construction may be either postponed or hastened, as may seem best to the Commission.

With respect to the general principles on which the routes of parkways to be paid for by the Metropolitan District ought to be chosen, we see no reason to change the views expressed in previous annual reports. Whoever will study the circular diagram of the district submitted herewith will perceive several conspicuously desirable connections with and approaches to the reservations which it would profit the district to possess, for it is plain that the reservations cannot benefit the people as they ought to unless they can be made agreeably accessible. On the other hand, it is obvious that mandatory legislation, requiring the Commission to secure any particular parkways or any specifically mentioned reservations, would place the Commission in a very difficult situation as respects dealings with the owners of the lands directed to be bought, while it would probably upset such equitable and comprehensive schemes as commissions are established to devise and prosecute. If there are to be any additional Metropolitan Parkways, it is just as important that they should be placed and designed in accordance with some comprehensive scheme as it is that the reservations should be chosen, bounded and severally adapted to public use in accordance with rational and consistent general plans.

Respectfully submitted,

OLMSTED, OLMSTED & ELIOT.

BROOKLINE, MASS., Dec. 1, 1896.

ENGINEER'S REPORT.

BOSTON, Nov. 30, 1896.W. B. DE LAS CASAS, Esq.; *Chairman Metropolitan Park Commission.*

SIR:—I herewith submit the following report, for the year ending Nov. 1, 1896, of the work done in this department and of the incidental matters of interest.

The general scheme of organization has remained materially unchanged from that of the previous year, except necessary changes of individual men and additions to the force to meet the exigencies of the work. Assistants as far as practicable have been assigned to regular lines of work, and still further specialization will be pursued in the future, with economy and increased efficiency to the department, as the varieties of work called for assume a more permanent routine. At the beginning of the year the force engaged comprised 23 men, and this number has been increased until, at the present time, there are 32 employed in this department, rated as follows: 1 chief and 10 assistant engineers, 2 draughtsmen, 8 transitmen, 10 rodmen and 1 stenographer. The amount of pay roll has increased from about \$1,400 to \$1,800 a month.

An approximate appraisal of property belonging to the department, omitting value of maps, plans, notes and other records, made Nov. 1, 1895, was \$2,100; and Nov. 1, 1896, \$3,200.

The following is a tabulated statement of plans prepared during the year, omitting all blue print copies:—

	Abandonments and Addition- al Takings.	Boundaries.	Copies.	Grading and Construction Plans.	Individual Land Plans.	Restrictions.	Takings.	Topographical.	Office Working Plans.	Totals.
Beaver Brook Reservation, .	1	-	1	-	-	-	-	-	2	4
Blue Hills Parkway, .	-	-	2	-	7	2	2	-	3	16
Blue Hills Reservation, .	-	-	5	-	12	-	-	5	12	34
Charles River Reservation, .	2	-	2	-	8	-	2	-	3	17
Hemlock Gorge Reservation, .	-	-	1	-	-	-	1	1	4	7
King's Beach Reservation, .	-	-	-	-	-	-	2	-	-	2
Middlesex Fells Parkway, .	2	-	10	11	7	-	7	2	4	43
Middlesex Fells Reservation, .	8	1	18	12	26	-	1	1	22	89
Mystic Valley Parkway, .	1	-	9	33	8	-	4	2	5	62
Neponset River Reservation, .	-	-	-	-	1	-	-	1	1	3
Neponset River Parkway, .	-	-	-	-	-	-	-	-	3	3
Revere Beach Reservation, .	4	-	3	2	11	-	-	11	1	32
Stony Brook Reservation, .	11	1	8	4	10	-	-	12	16	62
West Roxbury Parkway, .	-	-	-	-	1	-	-	-	-	1
	29	2	59	62	91	2	19	35	76	375

Many surveys and plans of separate properties have been made for the use of the conveyancing department, and for use in the courts and in settlement of claims. Boundaries of new takings have been referred when possible to the meridian line and parallel of latitude passing through the State House. Topographical surveys and maps have been made of the Stony Brook, Hemlock Gorge and Revere Beach Reservations; of the proposed entrance to Fells Reservation from Marble Street, Stoneham; of the proposed Neponset River Parkway from Stony Brook Reservation to Paul's Bridge in Milton; and a beginning for a possible parkway in Milton and Quincy. Those topographical surveys have been made generally with plane table and stadia, cover an area of 1,009 acres, and have cost, omitting incidental expenses, \$1.75 an acre.

BEAVER BROOK RESERVATION.

Repairs have been made, under the direction of this department, on the dams of the two mill ponds. The picturesque appearance of these old weirs has led to their preservation as far as possible in their original condition, and the repairs have been made mainly with the object of strengthening the dams and stopping the leaks. Further work is needed on these, and would have been done but for the flooding of the ponds by the autumn rains, causing a cessation of all

work except that considered necessary for their safety during the coming winter.

BLUE HILLS PARKWAY.

In continuation of Blue Hill Avenue, which is to be used as a parkway within the limits of Boston, thus giving a direct line of communication from Franklin Park towards the Blue Hills Reservation, taking and restriction plans have been prepared in Milton from Neponset River along Blue Hill Avenue and Mattapan Street, across Canton Avenue, to the Harland Street entrance of the Blue Hills Reservation.

BLUE HILLS RESERVATION.

Work on this reservation has been mostly confined to retracing and verifying the taking lines, staking out of portions of the boundaries, surveys for verifying of general topographical maps, and the making of surveys and plans of particular properties. Also, the entire boundary, and the principal triangulation points used in the topographical survey, have been permanently defined by stone bounds, bolts and drill holes.

CHARLES RIVER RESERVATION.

Surveys and plans for additional takings have been made in Newton and Watertown. A topographical survey of the Charles River valley has been begun in Newton and Weston.

HEMLOCK GORGE RESERVATION.

One survey and plan have been made for an additional taking. A topographical survey of the reservation, including some of the adjoining properties, was made in January and February, and plotted to a scale of 40 feet to an inch. In removing the mill on land taken from E. J. Hickey, the raceway dam and gate were found in such a leaky and insecure condition as to render rebuilding necessary. During this work the reservoir gate and wall on the opposite or westerly side of Charles River were rebuilt, and some additional work done in filling and grading a cellar. Bids were received for this work from five local contractors, and it was awarded to the lowest, Wm. H. Mague, and was carried forward under the supervision of Assistant Engineer A. E. Horton. The raceway dam as rebuilt consisted of an

earthen embankment with core wall, the upper face finished as a beach suitable for a canoe landing and the lower slope surfaced with loam and grassed. Additional work was done in grading adjacent slopes, filling of old raceway and clearing away of rubbish. Quantities of materials used were as follows: 80 cubic yards rubble masonry core wall, in which was used 112 barrels of Rosendale cement; 14 cubic yards rubble masonry for reservoir gate, and 18 barrels of cement; 2,135 cubic yards filling used in dam construction and incidental filling and grading; 340 cubic yards filling in cellar; and 160 cubic yards loam for surfacing. The cost of the foregoing work was as follows:—

Raceway dam and filling,	\$1,693 77
Reservoir dam and gate,	160 03
Grading at cellar,	130 47
<hr/>	
Total,	\$1,984 27

A piece of grading and retaining wall, where several buildings were removed on the westerly side of the river near Central Avenue in Needham, has been done by Walter Chesley, contractor, at an expense of \$252.52. The same contractor has also in progress certain grading and removal of old buildings, between Ellis Street and the river.

MIDDLESEX FELS PARKWAY.

Proposals for the construction of the Malden section, or "Fellsway East," from Pleasant Street to Bears' Den entrance of the Middlesex Fells Reservation, were received July 19, 1895, from eight contractors. The totals of their bids were as follows:—

	Total with Broken-stone Surfacing of Roadways.	Total with Gravel Surfacing of Roadways.
Neill McBride, Brighton,	\$81,891 50	\$81,891 50
H. P. Nawn, Boston,	81,708 50	80,328 50
T. J. Kelley, Brookline,	74,931 00	70,791 00
Wm. H. Mague, West Newton,	74,371 50	71,611 50
Thos. Gavin, Watertown, Patrick Grace, Brighton, and Michael J. O'Hearn, Brookline,	67,615 50	60,715 50
R. A. Malone & Sons, Boston,	66,909 50	69,669 50
Thos. F. Maney, Quincy Point,	63,396 75	60,636 75
McCusker Bros., Waltham,	55,968 00	54,588 00



MIDDLESEX FELS PARKWAY,
FELLSWAY EAST.

The contract was awarded to McCusker Bros., roadways to have a finished surface of broken stone, at the following prices per item: 35 cents a cubic yard for earth grading, \$1.25 a cubic yard for rock grading, 28 cents a foot for 8-inch drain, 34 cents a foot for 10-inch drain, 40 cents a foot for 12-inch drain, \$12 a cubic yard for brick masonry, \$4.50 a cubic yard for rubble masonry laid in cement mortar, \$2 a cubic yard for rubble masonry laid dry, 35 cents a square yard for cobble-stone gutters, \$1 a foot for edgestones, 25 cents a square yard for broken-stone surfacing, 10 cents a square yard for gravel walk, and 7 cents a square yard for loam surfacing. The construction began Aug. 15, 1895, and was completed Sept. 30, 1896. Assistant Engineer H. A. Hall has had charge of all construction on this and the Mystic Valley Parkways.

The following is a statement of the quantities, as given by preliminary and by final estimates, and the total increase or decrease in cost for each item: —

	Preliminary Estimate.	Final Estimate.	Increase.	Decrease.
Earth grading (cubic yards),	23,400	30,164	—	\$1,132 60
Rock grading (cubic yards),	25,400	29,891	\$5,613 75	—
8-inch drain (linear feet),	1,215	1,539	90 72	—
10-inch drain (linear feet),	1,745	1,618	—	43 18
12-inch drain (linear feet),	530	818	115 20	—
Brick masonry (cubic yards),	50	111	732 00	—
Rubble masonry laid in cement (cubic yards),	40	—	—	180 00
Rubble masonry laid dry (cubic yards),	300	544	488 00	—
Gutters (square yards),	1,350	1,324	—	6 50
Edgestones (linear feet),	1,110	1,248	138 00	—
Broken-stone surfacing (square yards),	27,600	31,343	935 75	—
Gravel walks (square yards),	5,700	6,661	96 10	—
Loam surfacing (square yards),	15,500	14,523	—	68 39
Extras, . . . . .	.	.	3,886 68	—
Totals, . . . . .	.	.	\$12,096 20 1,430 67	\$1,430 67
			\$10,665 53	
Total preliminary estimate, based on contractor's prices,	.	.	55,968 00	
Final estimate, . . . . .	.	.	\$66,633 53	

The increase in quantity of rock grading was due principally to the usual difficulty of correctly estimating, before its surface is uncovered and definitely known. The day work was mainly owing to the necessity of obtaining a large quantity of loam from outside sources, and to the cost of treatment of areas covered with waste of surplus material.

A special arrangement was made with McCusker Bros., by which additional work, not included in the previously mentioned contract, was done, — the rebuilding of a portion of Murray Street, making connection with the parkway road, and also grading at the junction with Sawyer Street. The cost of this work was \$7,540.53, according to the final estimate. The following is a summary of the cost of construction of Fellsway East from Pleasant Street to reservation, a distance of 5,200 feet, the total being well within the engineer's original estimate: —

Contract work begun Aug. 15, 1895,	\$66,633 53
Murray and Sawyer streets and connections, . . .	7,540 53
Bills paid for catch-basin gratings, fencing, changes of water pipes, stakes, etc.,	2,081 97
Engineering and incidentals,	4,615 72
Total,	<hr/> \$80,871 75

A large amount of surplus rock excavation of a quality unsuitable for surfacing has been taken from the Malden section to the Medford section, and used for filling. The total cost of this has been \$3,513.33, which is about 25 cents a cubic yard, measured in embankment.

Plans of taking for the main line of the Middlesex Fells Parkway, from Mystic Avenue in Somerville to Pleasant Street in Malden and Salem Street in Medford, have been prepared, and construction plans for the same are completed.

MIDDLESEX FELS RESERVATION.

The boundary of this reservation has been gone over in preparation for setting of stone bounds, and the triangulation points used in the general topographical survey have been permanently marked on the ground. That portion of the reservation known as the Virginia Woods has had its boundary marked by stone bounds.

The sum of \$380.42 has been expended in making a suitable connection of Fellsway East with the existing reservation roads at Bears' Den entrance. The construction of the Border Road, extending westerly three thousand feet from Bears' Den entrance to Highland Avenue, was decided upon as a continuation in that direction of the parkway, the roadway to be twenty feet in width and finished with a gravel surface. Proposals for the construction of this road were received Aug. 24, 1896, from the following contractors:—

A. Michelini, Reading,	\$6,754 20
Thomas R. Howard, Malden,	5,893 60
M. Gill & Son, Somerville,	5,878 00
P. H. Byron, Medford,	5,054 00
David Scanlon, Arlington,	4,866 60
H. & D. Burnett, East Boston,	4,537 50
Fred E. Ellis, Melrose,	3,787 00
McCusker Bros., Waltham,	3,609 00
Andrew Carberry, East Walpole,	2,977 60

The contract was awarded to Andrew Carberry, at the following prices per item: 30 cents a cubic yard for earth grading, \$1.45 a cubic yard for rock grading, 23 cents a foot for 8-inch drain, 53 cents a foot for 15-inch drain, \$10 a cubic yard for brick masonry, 2 cents a square yard for roadway shaping and rolling. This work has been carried forward under the same engineering direction as that of Fellsway East, and the prospects are favorable for its completion on contract time, Dec. 1, 1896. Previous to the award of this contract a portion of the surplus rock from parkway construction had been used in building a portion of this border road to sub-grade, at an expense of \$779.75.

The construction of another border road, for which construction plans were made, has been started by the regular force employed on the reservation. This road in Stoneham will be about 2,500 feet in length, and will extend from Wyoming Avenue to Emerson Street in the edge of Melrose.

MYSTIC VALLEY PARKWAY.

Proposals for the construction of a driveway in the Mystic Valley Parkway, from High Street in Medford to Walnut Street in Winchester, were received Jan. 3, 1896. This

driveway, 36 feet in width and 2.4 miles in length, was to be built to sub-grade only, as suitable gravel for road surfacing could not be obtained within the parkway limits, and much other work was necessary for its completion. Proposals were received from the following contractors : —

John B. McKenna, Boston,	\$42,548 00
McCusker Bros., Waltham,	35,790 00
John F. O'Brien, North Cambridge,	31,648 33
Craib & Trumbull, Winthrop,	29,609 00
Thomas Gavin, Watertown,	28,383 50
John Sheehan & Co., Lynn,	29,150 00
Martin Gill & P. H. Byron, Somerville and Medford,	27,671 00
Wm. H. Mague, West Newton,	23,150 50

This contract was awarded to Wm. H. Mague, at the following prices per item : 19 cents a cubic yard for earth grading, 40 cents a cubic yard for furnishing filling material, 25 cents a foot for 8-inch drain, 33 cents a foot for 10-inch drain, 39 cents a foot for 12-inch drain, \$12 a cubic yard for brick masonry, \$3 a cubic yard for rubble masonry laid dry, \$1 a foot for edgestone, 20 cents a square yard for gravel walks and 9 cents a square yard for loam surfacing. This work was completed on contract time, Sept. 15, 1896, the final estimate amounting to \$26,055.33. The excess of this amount over the aggregate given in proposal is more than accounted for by the amount estimated at contract price for overhaul, and which does not appear in the above canvass for proposals.

A portion of the Mystic Parkway in Winchester between Mystic Avenue and Walnut Street consists of low, swampy ground, and, being a menace to the health of the neighborhood, required filling. Proposals for this filling to sub-grade were received Sept. 28, 1896, from the following : —

Charles McDermott, Brockton,	\$7,545 00
McCusker Bros., Waltham,	7,507 00
P. H. Byron & Co., Medford,	7,108 00
Cyrus Barton & C. W. Parsons, Lowell,	6,818 00
Wm. H. Mague, West Newton,	6,006 50
David Scanlon, Medford,	5,475 65
M. Gill & Son, Somerville,	5,061 00



MYSTIC VALLEY PARKWAY.

This contract was awarded to M. Gill & Son, at the following prices per item: 25 cents a cubic yard for earth excavation, 32 cents a foot for 12-inch drain, 85 cents a foot for 24-inch drain, \$12 a cubic yard for brick masonry, \$3.50 a cubic yard for rubble masonry and $42\frac{1}{2}$ cents a cubic yard for furnishing filling material. This work is in progress at the present time.

The Mystic drive at the upper end of Upper Mystic Lake, crossing the Abbajona River near its outlet, made necessary a bridge of 50 foot span. The extremely low state of the water in the lake in July required the hastening of its construction, if advantage was to be taken of this very favorable condition. Preliminary surveys, plans, soundings and other investigations consumed so much time that it was decided to dispense with the delay that would be caused by drawing of specifications and advertising a public letting, and the work was begun August 1, by day work. Arrangements for furnishing of machinery, tools and men were made with the contractor at work on the drive. The structure as built has abutments of rubble masonry with close and deep-pointed joints laid below the bridge seat in Portland and the remainder in Rosendale cement mortar, the curving wing walls continuing on either side up the river in revetement walls for about a hundred feet. The superstructure is of the riveted, arched steel girder type. The stone was mostly furnished from a quarry in Medford, by John Reagon, he being the lowest of five bidders, at \$2.15 a perch. A small amount was furnished by other parties at a lower figure, but the stone was not as suitable for the work, and could be used only for backing. The cut stone for bridge seats and coping was furnished by the Pigeon Hill Granite Company of Rockport, for \$1,785, they making the lowest of several bids invited for this material. The Massachusetts bridge companies gave figures for the superstructure, and the contract was awarded to the Boston Bridge Company, for \$2,700. Bids were solicited from six concerns for cement, and the lowest, Berry & Ferguson, were awarded the contract, at \$2.12 a barrel for "Burham" English cement and 98 cents a barrel for "Crescent" Rosendale cement. The lumber for foundations was purchased of H. A. Emerson &

Co. of Winchester. Owing to the nature of the foundations, the structure was designed as light in weight as was consistent with good strong construction. The soil upon which the foundations rest is a very fine running sand, rendering necessary the use of tongued and grooved sheeting in excavating; and a platform was made, upon which rests the masonry, the sheeting being cut at top of footing courses and left in place. The weight of structure with maximum load is estimated to bring a pressure of three-fourths of a ton to the square foot upon the soil under the foundations. The bridge at the present time is completed, but so recently that all bills therefor have not been approved and its cost cannot now be given. Immediately upon completion of stone work bids were solicited and received from five contractors for grading the approaches. The work was awarded to the lowest, P. H. Byron of West Medford, at 27 cents a cubic yard for earth grading and $\frac{1}{2}$ a cent additional a cubic yard for each 100 feet overhaul. This work is in progress at the present time.

Specifications have been prepared and proposals invited for the completion of the grading for the remainder of the parkway, the preliminary estimate for which is \$18,250.

REVERE BEACH RESERVATION.

The work on this reservation during the past year has been mainly of a nature preliminary to proposed construction features. For this object a topographical survey has been made of the entire reservation, test borings have been made on a portion, cross-sections plotted, and investigations made to establish grades for the proposed drive. Grades and lines have been given for a number of abutting properties. Plans are in progress, showing lands taken for the new location of railroad. Plans are also being made for the construction of proposed drive along the crest of the beach.

STONY BROOK RESERVATION.

A topographical survey has been made of this reservation, of a character similar to those made for Blue Hills and Middlesex Fells Reservations, but extending somewhat out-



MYSTIC VALLEY PARKWAY.

APPALTONA BRIDGE.

side the original taking lines. From this survey new boundaries have been determined that were better adapted for border roads, and new surveys and plans were made, showing abandonments and additional takings in consequence of these changes. Stone bounds have been set, establishing these boundaries.

A preliminary survey, with plans, has been made for a proposed road through the entire length of the reservation, from Glenwood Avenue in Hyde Park to Washington Street in Boston, and grades indicated.

A survey has also been made for a change, 1,000 feet in length, in one of the existing roads which passed outside the boundary, so as to bring it entirely within the limits of the reservation. Grades have been established for this piece of road, and it has been laid out ready for construction.

Respectfully submitted,

WM. T. PIERCE,
Engineer.

APPENDIX.

AN ACT RELATIVE TO THE METROPOLITAN PARKS AND BOULEVARDS.

[ACTS OF 1896, CHAPTER 550.]

Be it enacted, etc., as follows:

SECTION 1. The metropolitan park commission shall, prior to the first day of January in the year nineteen hundred, take all the lands which it is authorized to take, and shall lay out and construct all the parks, reservations, boulevards and other works which it is authorized to lay out and to construct, and the treasurer of the Commonwealth shall pay from the proceeds of the loans authorized for the purpose of meeting the expense of taking said lands, of laying out said parks and reservations and of constructing said boulevards and other works, or from the proceeds of any of said loans, all moneys required prior to and including the first day of January in the year eighteen hundred and ninety-six to and including said first day of January in the year nineteen hundred, to meet the interest and sinking fund requirements for said loans as estimated by said treasurer and to meet the cost of maintenance and operation of said parks, reservations, boulevards and other works as annually authorized by the legislature, and to meet such amount as has heretofore been paid from the treasury of the Commonwealth for such cost.

SECTION 2. The supreme judicial court sitting in equity shall in the year nineteen hundred, and in every fifth year thereafter, on the application of said commissioners or of the attorney of either of the cities or towns in the metropolitan parks district, and after notice to each of said cities and towns, appoint three commissioners, neither of whom shall be a resident of either of said cities and towns, who shall, after such notice and hearing as they shall deem sufficient and in such manner as they shall deem just and equitable, determine the proportions in which each of said cities and towns shall pay money into the treasury of the Commonwealth each year for the term of five years, beginning with the first day of January in each year in which such commissioners are required to be appointed, to meet said interest, sinking fund requirements, and cost, for such year, and any deficiency in the amount previously paid in as found by said treasurer, and shall return their award into said court: *provided, however,* that the commissioners

shall fix and return the proportion to be paid by the city of Boston for each year of the first of said terms at fifty per cent. Every such award when accepted by the court shall be a final and conclusive adjudication for the term, of all matters referred to the commissioners, and shall be binding upon all parties.

SECTION 3. The treasurer of the Commonwealth shall in the year nineteen hundred, and in each year thereafter, estimate, in accordance with the proportions determined as aforesaid, the several amounts required during the year beginning with the first day of January, from the cities and towns aforesaid, to meet said interest, sinking fund requirements, and cost, for such year, and deficiency, if any, and shall include the amount required from a city or town, in, and make it a part of, the sum to be paid by such city or town as its annual state tax, and the same shall be paid by the city or town into the treasury of the Commonwealth at the time required for the payment, and as a part, of its state tax: *provided, however,* that the moneys to be paid into the treasury of the Commonwealth each year, and the amount to be paid by the Commonwealth and made a part of the annual state tax levy, shall be as specified in section ten of chapter four hundred and seven of the acts of the year eighteen hundred and ninety-three, and in section eight of chapter two hundred and eighty-eight of the acts of the year eighteen hundred and ninety-four.

SECTION 4. Sections ten, eleven and twelve of chapter four hundred and seven of the acts of the year eighteen hundred and ninety-three, sections eight, nine and ten of chapter two hundred and eighty-eight of the acts of the year eighteen hundred and ninety-four, all acts in amendment of or in addition to said sections or either of them, and all other acts or parts of acts inconsistent with this act, are hereby repealed, and the treasurer of the Commonwealth shall not hereafter require the payment of, and no city or town shall hereafter pay, any money into the treasury of the Commonwealth under any determination or finding of any commission appointed under the provisions of said sections, or any of them.

SECTION 5. This act shall take effect upon its passage. [*Approved June 9, 1896.*]

OPINION OF THE ATTORNEY-GENERAL.

JULY 23, 1896.

Hon. JOHN W. KIMBALL, *Auditor*.

DEAR SIR:—Your letter of June 22 requests an opinion as to the construction of Statutes 1896, chapter 550, relative to the Metropolitan Parks and Boulevards. In order to understand the questions raised it is necessary to review the legislation relating to Metropolitan Parks.

The Metropolitan Park Commission was created, and authorized to lay out and construct parks, by Statutes 1893, chapter 407. By section 9 of that act a loan of one million dollars was authorized for a term not exceeding forty years, "to meet the expenses incurred under the provisions of this act." It was not the purpose of the Legislature, however, to impose the burden of the laying out, construction or maintenance of the Metropolitan Parks upon the Commonwealth. A policy of reimbursement from the cities embraced within the Metropolitan District was established in the original act, which has never been departed from in any subsequent legislation. The act in question provided that a special commission should be appointed for the purpose of determining substantially the proportion in which the expenses of Metropolitan Parks should be borne by the cities and towns in the Metropolitan District. The proportion assessed upon Boston was to be fifty per cent. of the whole. The proportion to be assessed upon the other cities and towns was to be determined by this special commission so constituted. A sinking fund was created by the act authorizing the loan, the annual contributions to which should be sufficient to extinguish the debt on maturity. Section 12 of the act provided that the amount of money required each year from the cities and towns in the district to meet the interest, sinking fund requirements and expenses for each year should be estimated by the treasurer in accordance with the proportion established by the special commission, and assessed upon such cities and towns as a portion of their State tax. By the operation of this plan, therefore, although all the moneys required for Metropolitan Parks was to be raised by the Commonwealth by means of a loan, and advanced when necessary, the whole of the principal and interest of said loan, and the expenses of maintaining the parks,

were eventually to be assessed as a tax in the proportion thus ascertained upon the cities and towns of the district.

A special commission was thereupon appointed by the supreme judicial court, which proceeded to hear the parties, and to assess the proportion to be paid by each city and town within the district. This report was ultimately confirmed by the court. From time to time additional authority to expend money in laying out and constructing parks and parkways was granted to the Commission, and loans for corresponding amounts authorized to be made by the treasurer to meet the expenses thereof; the whole amount of loans so authorized being \$4,300,000. The last loans voted were by Statutes 1896, chapters 466 and 472. By chapter 466 the Park Commission was authorized to "expend the further sum of one million dollars in addition to all sums heretofore authorized to be expended by it;" and to meet the expenditures so authorized to be incurred the treasurer was directed to issue a corresponding amount of scrip or certificates of indebtedness. By chapter 472 the Commission was authorized to expend the further sum of five hundred thousand dollars for roadways and boulevards, and a corresponding loan was authorized to be made by the treasurer. The acts were approved June 4, 1896, and took effect upon their passage.

Under the act creating the Park Commission (Statutes 1893, chapter 407) it was directed to estimate annually the expense of preservation and care of the parks for the ensuing year and certify the same to the treasurer, such expenses to be apportioned among the cities and towns in the same manner as the expenses of location and construction. This estimate was limited in the original act at twenty thousand dollars, but the limitation was afterwards removed. In pursuance of this authority, estimates have been made by the Commission from time to time, and the Legislature has each year appropriated sums of money to be paid out of the ordinary revenue for the care and maintenance of the parks, to wit: 1894, \$20,000; 1895, \$37,000; 1896, \$40,000. Under the statutes of appropriation these sums were not taken from the park loans, but were imposed upon the cities and towns in the district, in addition to the amounts authorized for laying out and construction.

Complaint was made by some cities and towns that the apportionment established by the Commission was necessarily premature,—being made before the completion of the work of laying out and constructing the parks, and, therefore, possibly unfair. The statute under consideration (Statutes 1896, chapter 550) was undoubtedly passed in recognition of the justice of these complaints. It does not undertake to change or modify the purpose originally declared by the Legislature of assessing the expenses

of the laying out, construction and maintenance of Metropolitan Parks upon the cities and towns within the district. But it abolishes the work of the special commission above referred to. It further directs the Park Commission to lay out and construct all the parks which it is authorized to construct before the first day of January, A.D. 1900; and further provides that during the year 1900 a new special commission shall be appointed to assess the proportions to be paid by the several cities and towns in the district, in the same manner as was provided by the original act. The necessary intent of this law is, not to impose any part of the burden of Metropolitan Parks upon the Commonwealth, but to postpone the time when the cities and towns shall begin to reimburse the Commonwealth for the money advanced by it for that purpose. But, inasmuch as it would be onerous to require the cities and towns in the district to pay in one sum all the interest and fixed charges, and expenses of maintenance incurred from the beginning of the enterprise up to the year 1900, the act provided that all these charges and expenses should be paid by the treasurer out of the loans authorized. The result of this will be that in the year 1900 the only demand upon the cities and towns will be the bonds then outstanding, the interest, sinking fund requirements and all expenses of care and maintenance accruing prior to that time having been paid out of the loan itself. It follows that the time of beginning reimbursement to the Commonwealth by the cities and towns is thus postponed for four years; but as a necessary result of this either the amount to be expended for parks and boulevards must be reduced, or the amount to be paid by the cities and towns must be increased. This is because the whole sum which the cities and towns assume from and after the first day of January 1900 includes all interest and sinking fund requirements and expenses of maintenance to that date; these sums being necessarily either added to the whole loan, which is thus made greater, or taken from the loans now authorized.

The question stated in your letter is this, substantially: Is it the intent of the act that the loans heretofore authorized shall be increased by the amount of the interest, sinking fund requirements and expenses of maintenance already incurred and to be incurred between now and the year 1900, or are these expenses to be deducted by you from the fund created by the loans already authorized? The question is one of importance, because the necessary result of deducting all the charges and expenses so imposed upon the loan itself is to cripple seriously the work of the Park Commission, by diminishing the amount of money placed at their disposal by previous acts, the last of which was enacted June

4, only five days before the act in question took effect. If you are to reckon only such expenses as already have been authorized, and the interest and sinking fund requirements now contracted for, the amount to be deducted from the fund created by the park loans will be, I am informed, about \$700,000. If the statute requires you to go further, and deduct such sums as you estimate will be required for expenses from this time until the year 1900, the amount to be deducted will be about \$950,000, or nearly the whole amount which the Commission was authorized to expend upon parks, under the authority of the act of June 4 passed by the same Legislature.

It is claimed by the Park Commission that it is inconceivable that the Legislature on the fifth day of June should authorize the Commission to expend the sum of one million dollars, and on the ninth day of June practically take away this power. The act of June 5 was passed after a careful consideration of the purposes and needs of the Commission. I am told that it was stated by the Park Commission to the Legislature that the sum of one million dollars was needed to complete the parks according to the plans under consideration before them; and the statute of June 5, giving them that sum, must be taken to be a recognition by the Legislature of the needs of the Commission at that time.

The Park Commission claim that both acts must be construed to stand, rather than fall; and that the latter act must be taken to be an authority, express or implied, for an additional loan by the treasurer to meet the charges and expenses so imposed upon the loan itself.

There is much force in this contention, but the difficulty in the way is that it is not sustained by the plain language of the last statute, being the one under consideration. Section 1 of this statute provides, in express terms, that "the treasurer of the Commonwealth shall pay from the proceeds of the *loans authorized*" all moneys required up to and including the first day of January, 1896, to meet interest and sinking fund requirements and cost of maintenance. The Legislature of 1896 cannot be said to have required the treasurer to speculate upon the chances that a future Legislature would authorize an additional loan. The words "loans authorized" cannot be construed to mean loans hereafter to be authorized. A loan is not authorized until the act therefor is passed by the Legislature; and I cannot advise you that the Legislature of 1896 gave you any ground by the language of section 1 to expect that an additional loan would be authorized by a future Legislature. A legislative body cannot bind its successor, nor can it authorize the officers of the government to act

in anticipation of what may be authorized by a succeeding Legislature.

Still less can the section be said to be a present authority for an additional loan. The language not only does not warrant such an inference, but it plainly points to the contrary; it directs the treasurer to pay the charges in question out of the "loans authorized," not out of loans to be created therefor.

I am of opinion, therefore, that it is your duty to charge to the account of the fund created by the Metropolitan Park loans heretofore authorized, such a sum of money as will be sufficient to meet the interest and sinking fund requirements up to and including the first day of January, 1900.

It is probable that, so far as the intent of the Legislature can be ascertained from the language of the section, it was expected that further expenses of care and maintenance of the parks, as "annually authorized" by the Legislature, should also be paid out of the same fund. In my judgment, however, it is impossible for you to carry out this intent. You cannot even estimate what may be the action of future Legislatures. It is not sound logic to estimate from the action of previous Legislatures what will be the amount appropriated by future Legislatures for care and maintenance. The General Court is the sovereign, and no citizen or officer can presume in advance what its action will be. If you were to undertake to reserve any sum of money out of the park loan fund for future care and maintenance, there is no middle ground; it would be your duty to reserve the entire loan to await the action of future Legislatures up to the first of January, 1900. The result of this would be to stop all work upon the parks. Notwithstanding the evident meaning of the language of the act, I am of the opinion that you are not called upon at this time to set apart any portion of the fund for future unascertained and unascertainable contingencies. It is your duty to charge the fund with all the amounts heretofore appropriated for care and maintenance. When you have done this, your duty in this respect is discharged. If a succeeding Legislature shall, in the exercise of its sovereign power, appropriate a sum of money for care and maintenance of the parks, and, under the authority given by the previous Legislatures, all the then available proceeds of park loans have been expended by the Commission for the purposes of park construction, it is to be presumed that the Legislature which makes the appropriation will provide the means for its payment, either out of the ordinary revenue or by authorizing a new loan.

Very truly yours,

(Signed)

HOSEA M. KNOWLTON, *Attorney-General*.

METROPOLITAN PARKS LOANS.

ANALYSIS OF PAYMENTS FROM JAN. 1, 1896, TO
DEC. 3, 1896, PREPARED IN STATE AUDITOR'S
OFFICE.

SERIES I.

<i>Blue Hills Reservation.</i>	
Axes,	\$62 74
Carriage hire,	41 00
Galvanized wire, etc.,	96 02
Hardware,	15 30
Hire of horses,	1,696 56
Labor,	21,884 75
Lumber,	31 50
Peppermint,	15 08
Posts,	72 00
Photographs,	16 00
Stakes,	17 60
Sharpening tools,	405 00
Travel,	18 00
Telephones,	44 26
Tools,	43 70
Balch & Rackemann,	1,018 27
Experts,	259 75
French, Bryant & Taylor,	2,510 29
Louis E. Hawes,	294 23
Olmsted, Olmsted & Eliot,	138 30
Samuel D. Parker,	25 00
J. Herbert Shedd,	163 34
George W. Morton,	118 35
Land:—	
Charlotte W. Allen,	33 33
Zenas S. Arnold, attorney,	180 00
Lewis Bass and Sarah E. N. Edwards,	5,914 00
Tobias H. and Thomas F. Burke,	150 00
Sarah E. N. Edwards,	600 00
Jere P. Fenno,	178 56
Joseph H. Farrington,	6,380 92
George A. Fletcher,	240 18
Hiram A. French,	91 00
William S. Greenough,	73 33
Susan J. Hollingsworth,	241 50
Edward E. Howe <i>et al.</i> ,	287 49
Mary S. Kittredge <i>et al.</i> ,	90 00
Thomas L. Livermore,	146 67
Helen M. Mansfield,	1,000 00
Town of Milton,	814 69
Lucy F. J. Newton,	287 49
<i>Amount carried forward,</i>	\$45,696 20

Analysis of Payments, etc. — Continued.

<i>Amount brought forward,</i>	\$45,696 20	
Jeannie W. Paine,	2,800 00	
Rufus Pierce,	500 00	
Suffolk Savings Bank,	5,380 13	
Robert Sugden <i>et al.</i> ,	33 34	
J. Henry Taylor, trustee,	695 00	
Charles O. Wales,	1,425 00	
Ellerton P. Whitney <i>et al.</i> ,	5,936 70	
Total,		\$62,416 37
<i>Middlesex Fells Reservation.</i>		
Axes,	\$55 50	
Coal,	5 53	
Chimney,	10 40	
Drafting plans,	10 00	
Damages,	150 00	
Dynamite,	29 55	
Doors and frames,	39 65	
Carpenter work,	140 00	
Experts,	1,296 20	
Fence,	11 32	
Furnace,	163 00	
Gravel,	10 92	
Hardware,	58 54	
Hire of horses,	2,445 55	
House, barn, etc.,	750 00	
Labor,	14,334 70	
Lumber,	430 58	
Mantel,	8 10	
Plumbing,	442 61	
Painting,	128 77	
Repairs to building,	110 00	
Shingling building,	375 00	
Stove,	12 00	
Sharpening tools,	196 20	
Stakes,	11 25	
Sheriff's services,	57 90	
Stone wall,	65 00	
Balch & Rackemann,	4,660 85	
Elder, Wait & Whitman,	15 00	
French, Bryant & Taylor,	1,742 86	
Alfred S. Hayes,	25 00	
Olmsted, Olmsted & Eliot,	220 41	
Thomas O'Loughlin,	45 00	
Edward E. Rand,	25 00	
Henry C. Rand,	900 00	
Charles F. Spear,	100 00	
J. E. Wolff,	25 00	
C. L. Whittle,	200 00	
M. P. Wright,	50 00	
Land:—		
Emma I. S. Adams,	116 75	
<i>Amounts carried forward,</i>	\$29,474 14	\$62,416 37

Analysis of Payments, etc. — Continued.

<i>Amounts brought forward, .</i>		\$29,474 14	\$62,416 37
Francis P. Adams,	707	28	
Mary E. B. Albertson,	50	00	
Sarah Atkinson,	2,485	00	
George D. Ayers,	600	00	
Selwyn Z. Bowman, attorney,	900	00	
Francis Burke, attorney,	4,500	00	
Francis H. Bacon,	3,042	50	
Elizabeth Baldwin,	750	00	
John A. Barnes,	2,002	34	
Mary J. Basford,	30	00	
Boston Rubber Shoe Company,	15,740	58	
Emma F. Bowers,	100	00	
John H. Brennan,	500	00	
James Briggs,	557	50	
Charles Butters,	2,600	00	
Helen L. Butterfield,	787	79	
Lucretia F. Carr <i>et al.</i> ,	1,000	00	
George T. Connor,	948	00	
Susanna C. Cook,	925	50	
Joseph Faulkner <i>et al.</i> ,	1,760	00	
Charles A. Frost,	11,000	00	
David and William Jamieson,	45	20	
William P. Greeley,	15,000	00	
Mary A. Guerineau,	400	00	
Sidney A. Hill,	600	00	
Benjamin Hitchings,	500	00	
George W. Holden,	1,262	50	
Harry Hunt,	50	00	
Emily H. Hayward,	350	00	
Henry Lynde,	2,500	00	
Mary E. Johnston,	237	66	
Samuel C. Lawrence,	57,483	40	
Elizabeth C. Locke <i>et al.</i> ,	336	50	
D. H. McKay,	5,910	40	
Ellen McCarthy,	3,672	50	
Melrose Savings Bank,	527	50	
Robert S. Minot, trustee,	6,000	00	
Esther M. Morcombe,	200	00	
Harriet E. Makechnie,	3,100	00	
New England Hospital for Women and Children,	3,057	50	
Joseph W. Noble,	1,093	75	
Aaron B. Magoun,	6,300	00	
Thomas Quigley,	7,147	10	
Jennie W. Page,	2,700	00	
Charles Ramsdill,	350	00	
Mary O. Rolfe,	73	90	
John A. Scott,	45	20	
William J. Scott,	30	80	
Mary A. A. Scrannage,	6,525	00	
William Scrannage, executor,	1,015	00	
Mathilda E. Stantial,	800	00	
<i>Amounts carried forward, .</i>		\$207,774 54	\$62,416 37

Analysis of Payments, etc.—Continued.

<i>Amounts brought forward, \$207,774 54</i>		\$62,416 37
Severin St. Denis,	6,500 00	
Arvilla N. Stocker,	1,093 75	
Joseph Swan,	550 00	
Marshall Symmes,	3,050 00	
Ida R. Tay,	3,500 00	
Samuel Teele,	2,165 00	
Town of Stoneham,	825 00	
Mary E. Upham,	75 00	
Nellie S. Washburn,	31 00	
William C. Wait, attorney,	3,000 00	
Ida E. Wadsworth,	3,500 00	
Horace E. Willis,	9,320 00	
Mary F. Walling,	267 00	
Ellen M. Wright,	6,889 00	
William Wood,	300 00	
Jonathan Munyan <i>et al.</i> , trustees,	43,671 03	
Total,		292,511 32
<i>Beaver Brook Reservation.</i>		
Carriage hire,	\$4 00	
Cement,	20 70	
Flag,	11 50	
Labor,	1,227 23	
Horses,	205 85	
Photographs,	19 25	
Plumbing,	20 75	
Repairs on street,	83 87	
Sharpening tools,	11 75	
Uniform for officer,	24 50	
Balch & Rackemann,	112 25	
B. McCusker,	95 80	
Olmsted, Olmsted & Eliot,	88 30	
Total,		1,925 75
<i>Stony Brook Reservation.</i>		
Bath house and fence,	\$105 00	
Hire of horses,	474 84	
Labor,	2,972 75	
Lumber,	9 66	
Photographs,	9 00	
Plumbing,	110 00	
Posts,	84 00	
Sharpening tools,	2 03	
Stakes,	10 00	
Travel,	140 00	
Witnesses and experts,	2,370 00	
Balch & Rackemann,	585 83	
J. H. Burt & Co.,	175 00	
Olmsted, Olmsted & Eliot,	157 13	
J. E. Wolf,	25 00	
C. E. Johnson,	100 00	
C. H. Whittle,	160 00	
<i>Amounts carried forward, \$7,490 24</i>		\$356,853 44

Analysis of Payments, etc. — Continued.

<i>Amounts brought forward,</i>	<i>\$7,490 24</i>	<i>\$356,853 44</i>
J. S. Coveney,	100 00	
George W. Morton,	315 00	
Land:—		
Hannah B. Basto,	4,750 00	
Andrew J. Browne,	6,121 41	
Edmund Daily,	9,000 00	
Cotter & Fellows, attorneys,	18,780 00	
Heirs of William Enslin,	2,500 00	
Laura B. Ellison,	1,220 00	
Alice Island,	10,000 00	
Fredericke Ruelberg <i>et al.</i> ,	360 00	
Nathaniel M. Safford,	10,500 00	
James C. Sharpe,	300 00	
Mary M. Stevens,	2,183 75	
John W. Smith,	20,000 00	
William M. Thompson,	50 00	
Clifton S. Thompson,	50 00	
William C. Sharp,	200 00	
Trustees Eliot School,	5,500 00	
Charles F. Jenney, attorney,	5,250 00	
Total,		104,670 40
<i>Revere Beach Reservation.</i>		
Advertising,	\$385 19	
Building foundation for bridge,	442 00	
Cement,	14 75	
Cementing cellar, etc.,	185 00	
Drinking fountain,	35 00	
Electric lights,	167 50	
Drains,	199 00	
Experts,	396 93	
Flag,	15 00	
Gravel,	7 82	
Hot water heater,	300 00	
Horse hire,	58 62	
Labor,	613 18	
Plans,	26 03	
Photographs,	60 00	
Police station,	699 61	
Piping,	60 42	
Painting,	332 00	
Papering,	42 62	
Plumbing,	41 45	
Repairs to bulkhead,	275 00	
Repairs to fence,	26 30	
Repairs to superintendent's house,	960 00	
Screens,	24 25	
Stenographers,	182 17	
Sheriff's services,	13 06	
Travel,	28 00	
Work on band stand,	17 00	
<i>Amounts carried forward,</i>	<i>\$5,607 90</i>	<i>\$461,523 84</i>

Analysis of Payments, etc.—Continued.

<i>Amounts brought forward,</i>	<i>\$5,607 90</i>	<i>\$461,523 84</i>
Window shades,	16 20	
Water meter,	59 19	
Witness fees,	69 02	
W. T. Pierce,	5 64	
Balch & Rackemann,	2,430 97	
B. F. Flinn,	305 00	
Olmsted, Olmsted & Eliot,	69 48	
George A. Torrey,	10 00	
E. K. Turner,	879 00	
Stickney & Austin,	75 00	
William T. Eaton,	2,318 00	
Boston, Revere Beach & Lynn Railroad,	50,843 06	
Land:—		
Melvin O. Adams, attorney,	3,933 42	
J. Harris Aubin,	2,000 00	
Boston Co-operative Bank,	539 76	
Washington G. Benedict,	58,179 93	
John A. Daly,	1,000 00	
John J. Donovan,	546 86	
Margaret Daly,	2,594 47	
County Savings Bank,	6,141 78	
Nicolas Estevez,	1,363 00	
John D. Cobb,	169 60	
Hepsebeth Fenton,	2,818 97	
Otis L. Fern, trustee,	3,827 83	
David Floyd,	1,652 50	
Wm. E. Flynn, trustee,	1,935 07	
Louisa J. Govan <i>et al.</i> ,	500 00	
Mary C. Griffith,	2,459 38	
France B. Hiller,	7,000 00	
William T. Hall,	2,200 00	
Patrick Hargrove,	1,727 95	
Charles H. Hayden,	1,000 00	
Marcella A. Kirby,	11,000 00	
George S. Lee, trustee,	1,760 00	
James and Patrick Manning,	1,600 00	
Donald K. McLeod,	1,600 00	
Arthur D. McClellan,	1,760 00	
Elizabeth McDonald,	1,500 00	
Dominic Maggi, trustee,	788 25	
Jeremiah Mara,	546 86	
Mary E. Murphy,	2,112 39	
Philip J. Myer,	701 83	
Charlotte McLeod,	1,600 00	
Edward J. Murphy,	1,000 00	
Robert F. Naylor,	227 55	
Ida E. Pearce,	6,100 00	
Virginia F. Potter,	314 95	
William G. Reed,	1,109 84	
Town of Revere,	686 88	
<i>Amounts carried forward,</i>	<i>\$198,687 53</i>	<i>\$461,523 84</i>

Analysis of Payments, etc. — Continued.

<i>Amounts brought forward,</i> \$198,687 53		\$461,523 84
Frank P. Rogers, attorney, . . .	1,735 28	
Francis A. Sproul, . . .	2,250 00	
Clarence C. Smith, . . .	172 50	
John Sheehan, . . .	3,427 24	
William Smith, . . .	1,000 00	
Suffolk Co-operative Bank, . . .	190 40	
Augustus L. Thorndike, . . .	262 50	
Augustus L. Thorndike, guardian, . . .	1,017 00	
Eugene Tompkins, . . .	509 58	
Trustees Lexington Ministerial Fund, . . .	515 00	
William H. H. Tuttle, . . .	418 00	
William Watters, attorney, . . .	5,100 00	
William W. Webster, . . .	3,955 14	
Total, . . .		219,240 17
<i>West Roxbury Parkway.</i>		
Balch & Rackemann, . . .	\$286 95	
George E. Black, . . .	80 00	
Land: —		
Cyrus F. and David F. Decatur, . . .	2,391 74	
Germania Co-operative Bank, . . .	402 02	
Alice J. Hennessy, . . .	649 17	
Sophia Hasenfus, . . .	1,797 98	
Mary A. Hogan, . . .	360 00	
W. S. Mitchell, . . .	3,200 00	
Henry Schulenkorf, . . .	137 50	
Daniel Sullivan, . . .	770 00	
Frederick C. M. Damm, . . .	1,000 00	
Lizzie A. Damm, . . .	1,000 00	
Mathilde E. Rietzel, . . .	500 00	
William C. Rietzel, . . .	500 00	
Total, . . .		13,075 36
<i>Hemlock Gorge Reservation.</i>		
Bagging, . . .	\$3 25	
Experts, . . .	100 00	
Cement, . . .	131 55	
Carpenter work, . . .	11 40	
Grading, . . .	252 52	
Hats, . . .	8 00	
Hire of horses, . . .	16 50	
Labor, . . .	1,244 28	
Ladders, . . .	2 95	
Photographs, . . .	20 40	
Painting, . . .	26 25	
Rebuilding raceway dam, etc., . . .	1,485 73	
Rowboat, . . .	24 50	
Repairs, . . .	125 00	
Stakes, . . .	5 75	
Travel, . . .	22 00	
<i>Amounts carried forward,</i> . \$3,480 08		\$698,839 37

Analysis of Payments, etc. — Continued.

<i>Amounts brought forward,</i>	\$3,480 08	\$693,839 37.
Uniform for officer,	24 50	
Balch & Rackemann,	477 81	
Olmsted, Olmsted & Eliot,	35 73	
A. A. Savage,	15 00	
W. T. Pierce,	32 26	
Daniel Hurley,	800 00	
Land:—		
Henry W. Fanning,	4,900 00	
Mary Leach,	3,000 00	
Henry W. McIntosh <i>et al.</i> ,	1,787 94	
Jemima S. Wood,	712 06	
Clara M. Taylor,	3,883 20	
Harriet S. Towle,	116 80	
Total,		19,265 38
<i>King's Beach Reservation.</i>		
Photographs,	\$20 00	
J. W. Southworth,	40 00	
Balch & Rackemann,	644 00	
Total,		704 00
<i>Charles River Loan.</i>		
John Woodbury, assistant secretary,	\$52 08	
Olmsted, Olmsted & Eliot,	916 78	
William T. Pierce,	8 41	
Balch & Rackemann,	3,298 40	
John C. Cobb,	125 00	
Experts' services,	250 00	
Labor,	409 48	
Maps,	54 00	
Photogravures,	399 82	
Stakes,	3 25	
Travel,	17 50	
Land:—		
Abby V. Barry,	875 00	
Charles V. Bemis,	875 00	
John E. Cassidy,	18,675 00	
Amelia W. A. Eldridge,	13,447 00	
Benjamin M. Fiske,	10,166 67	
Farmers and Mechanics Savings Bank,	2,275 00	
Henry B. Goodénough,	8,443 00	
Elizabeth B. Howard,	3,574 00	
Phœbe G. Hosford <i>et al.</i> ,	350 00	
Mark A. Lawton,	1,140 00	
Francis Burke,	4,848 60	
Brighton Five Cents Savings Bank,	10,177 80	
<i>Amounts carried forward,</i>	\$80,381 79	\$713,808 75

Analysis of Payments, etc. — Continued.

<i>Amounts brought forward, .</i>		<i>\$80,381 79</i>	<i>\$713,808 75</i>
Thomas W. Carter,	4,848 60		
Granville A. Fuller,	5,125 00		
George H. Jaques,	9,833 33		
John R. Magullion <i>et al.</i> ,	2,000 00		
Margaret T. McCormack,	5,000 00		
Joseph W. Pearson, attorney,	15,000 00		
Watertown Savings Bank,	10,426 00		
Town of Watertown,	195 00		
W. H. Wade, attorney,	1,500 00		
Total,			184,309 72
John Woodbury, assistant secretary, \$156 25			
Alice G. Kelley, clerk,	347 92		
Mary C. Godvin, clerk,	60 00		
William T. Pierce,	97 96		
Olmsted, Olmsted & Eliot,	2,998 69		
George L. Rogers,	125 00		
F. S. Goodwin,	646 00		
Balch & Rackemann,	11,666 66		
Drawing material,	197 79		
Electric lighting,	6 04		
Furniture,	6 00		
Janitor's services,	60 00		
Hardware,	1 37		
Labor,	6,945 10		
Levels,	30 00		
Maps,	475 06		
Plumb bobs,	25 20		
Posts,	620 20		
Photogravure plates and printing,	934 56		
Rent of rooms, 13 Exchange Street,	329 17		
Rent of rooms, Ames Building,	400 00		
Repairing instruments,	16 30		
Stationery,	94 08		
Stakes,	35 45		
Tape measure,	13 50		
Travel,	60 45		
Telephone,	83 63		
Towel supply,	10 75		
Typewriting,	6 10		
Water cooler,	12 85		
Total,			26,462 08
Total expenditures in Series I.,			\$874,580 55

SERIES II.

<i>Blue Hills Parkway.</i>		
Balch & Rackemann,	\$592 52	
Olmsted, Olmsted & Eliot,	250 00	
Carriage hire,	77 50	
Experts,	600 00	
Horse hire,	325 08	
Labor,	301 50	
Gravel,	51 00	
Travel,	32 00	
Sharpening tools,	15 00	
Total,		\$2,244 60
<i>Middlesex Fells Parkway.</i>		
Advertising,	\$123 93	
Building engineers' office,	102 00	
Changing hydrants,	60 05	
Covers,	80 00	
Fence,	75 00	
Grates, etc.,	319 00	
Horse hire,	70 00	
Hardware,	7 34	
Labor,	377 35	
Posts,	215 00	
Photographs,	16 00	
Pole and scraper,	1 50	
Piping,	234 31	
Rent of house, Malden,	20 00	
Stone,	72 75	
Stakes,	68 00	
Sharpening tools,	15 40	
Signs,	35 90	
Travel,	173 50	
Traps, frames and covers,	194 00	
Use of transit,	8 00	
Water pipes,	41 57	
Balch & Rackemann,	592 35	
Olmsted, Olmsted & Eliot,	296 53	
McCusker Brothers,	63,222 31	
William T. Pierce,	11 03	
John H. Hooper,	75 00	
William J. Parker,	75 00	
Andrew Carberry,	1,837 68	
Land:—		
John G. Chandler,	400 00	
Jennie L. Elliott,	350 00	
Walter H. Morton,	1,950 00	
Stillman K. Roberts,	650 00	
Arthur H. Wellman, attorney,	100 00	
Total,		71,850 50
<i>Mystic Valley Parkway.</i>		
Advertising,	\$285 38	
Building fence,	171 33	
Amounts carried forward,	\$456 71	\$74,095 10

Analysis of Payments, etc. — Continued.

<i>Amounts brought forward, .</i>	<i>\$456 71</i>	<i>\$74,095 10</i>
Canvas,	8 88	
Coal,	189 99	
Carpenter work,	4 80	
Cement,	1,625 55	
Express,	14 40	
Fence wire,	28 61	
Filling pits,	516 64	
Freight,	16 43	
Grates, etc.,	391 07	
Granite,	1,796 25	
Horse hire,	24 50	
Iron piping,	264 10	
Labor,	404 02	
Lumber,	951 03	
Oil,	37 59	
Patterns,	3 40	
Posts,	23 40	
Piping,	14 28	
Photographs,	34 50	
Sewer pipes,	17 00	
Signs,	7 32	
Stove,	11 30	
Stakes,	111 50	
Stones,	1,614 35	
Travel,	125 25	
Teaming,	29 40	
Painting fence,	68 75	
Wood,	1 50	
Charles D. Elliot,	30 00	
N. Matthews, Jr.,	200 00	
Balch & Rackemann,	620 62	
Olmsted, Olmsted & Eliot,	1,297 88	
William T. Pierce,	39 90	
William H. Mague,	32,436 87	
M. Gill & Son,	974 12	
Land: —		
Peter C. Brooks,	7,500 00	
Jane J. O'Hara,	8,000 00	
George E. Smith, attorney,	6,000 00	
Total,		65,891 91
Labor,	\$9,758 97	
F. S. Goodwin,	615 65	
Olmsted, Olmsted & Eliot,	774 78	
J. H. Stubbs,	200 00	
William T. Pierce,	113 12	
Alice G. Kelley,	191 67	
Mary C. Godvin,	45 00	
George L. Rogers,	200 00	
Advertising,	219 35	
Books,	9 60	
<i>Amounts carried forward, .</i>	<i>\$12,128 14</i>	<i>\$139,987 01</i>

Analysis of Payments, etc. — Concluded.

<i>Amounts brought forward,</i>		\$12,128 14	\$139,987 01
Drawing material,		52 60	
Electric light,		38 42	
Hardware,		1 32	
Janitor,		105 00	
Ice,		5 45	
Printing,		4 00	
Map case,		45 00	
Photogravures,		280 37	
Repairs,		30 65	
Rent of offices,		800 00	
Stationery,		127 16	
Stakes,		31 35	
Spikes,		6 00	
Steel tapes,		61 44	
Travel,		221 50	
Telephone,		39 00	
Typewriter,		127 00	
Transits,		232 00	
Washing towels,		6 45	
Wrapping paper,		9 90	
Window shades,		5 38	
Total,			14,358 13
Total expenditures in			
Series II.,			\$154,345 14



